

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

**MINISTRY OF HIGHER EDUCATION AND
SCIENTIFIC RESEARCH**

Compliance framework TRAINING

**OFFER
L.M.D.**

ACADEMIC LICENSE

2014 - 2015

Establishment	Faculty / Institute	Department
University of Jijel	Faculty of Natural and Life Sciences	Molecular and Cellular Biology

Domain	Channel	Speciality
Natural and Life Sciences	Biological Sciences	Molecular Biology

الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التعليم العالي و البحث العلمي

نموذج مطابقة

عرض تكوين

ل . م . د

ليسانس أكاديمية

2015-2014

المؤسسة	إكلية المعهد	القسم
جامعة جيجل	علوم الطبيعة و الحياة	بيولوجيا جزيئية خلوية و خلوية

الميدان	الفرع	التخصص
علوم الطبيعة و الحياة	علوم بيولوجية	بيولوجيا جزيئية

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I - Licence profile

1 - Location of training

Faculty (or Institute): Natural and Life Sciences Department :

Molecular and Cellular Biology

References of the license approval order (attach copy order)

Arrêté n° 86 du 06 Mai 2009 portant habilitation de licences ouvertes au titre de l'année universitaire 2008-2009 à l'université de Jijel

2- Partners

- Other partner establishments: None
- Companies and other socio-economic partners: None

* Jijel SMI/SMEs in health and agri-food sectors

* Hygiene of the wilaya of Jijel

- International partners :

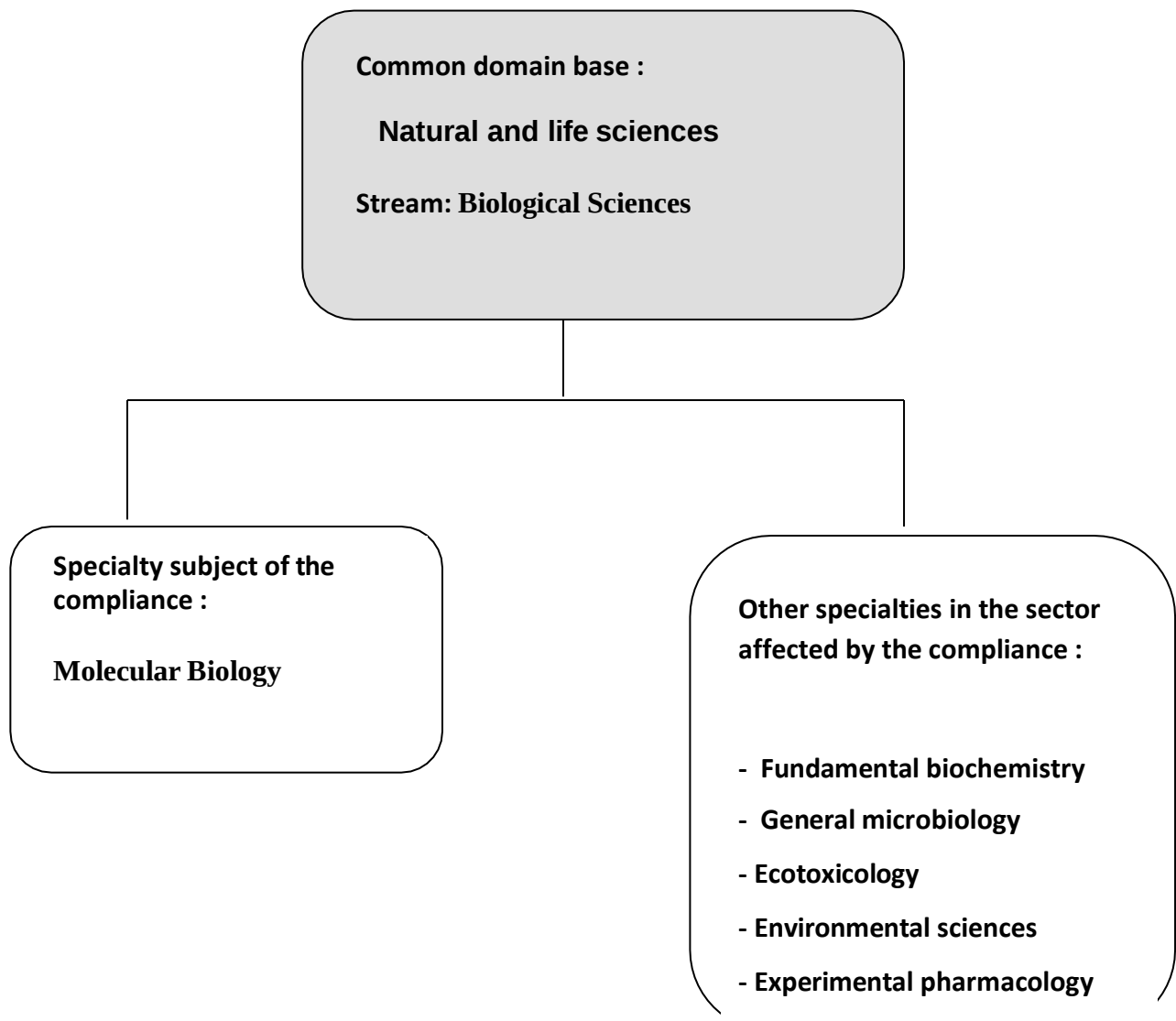
* INSERM laboratory unit 624, cellular stress, Marseille, France

* International Centre for Genetic Engineering and Biotechnology, Cape Town, South Africa

3 - Background and objectives of training

A - General training organization: project position (Required field)

If several bachelor's degrees are offered or already supported at the school level (by the same or other training teams), indicate in the following diagram the position of this project in relation to the other courses.



B - Training objectives (Mandatory field)

(Target skills, knowledge acquired on completion of training - maximum 20 lines)

The Bachelor's degree in Molecular Biology (BM) is an innovative training program that integrates all aspects of modern biology, especially molecular biology. It is aimed at students wishing to embark on a specialized, high-level teaching and research career. They will benefit not only from a comprehensive fundamental training in Molecular Biology, but also from a strong analytical physicochemistry component that will prepare them for in-depth, fundamental studies in Molecular and Cell Biology at Master's and PhD level, particularly at academic level.

The aim of the Molecular Biology course is to provide training of the highest scientific and practical quality, based on a molecular approach at the interface of Biology, Chemistry and Health.

The first four semesters are part of the Life Sciences core curriculum. They include a large proportion of Biology, while also introducing the various aspects of Biochemistry and the necessary notions of Chemistry. Semesters 5 and 6 are the semesters of strong specialization in Molecular Biology. The Molecular Biology B.Sc. curriculum fully integrates the situation of an interface discipline between Biology and Chemistry. It enables students to interact with chemists and biologists alike. It is aimed at students motivated by the chemical and physico-chemical approach to biological phenomena at the molecular level. It offers solid fundamental and theoretical training, as well as practical experience, thanks a high proportion of practical work and the possibility of completing a laboratory internship.

C - Target profiles and skills (mandatory field) (*maximum 20 lines*) :

The Molecular Biology bachelor's degree is designed for students wishing to focus on careers in fundamental or applied research in various fields, notably health and the environment, in university research laboratories, and in laboratories and companies active in the health sector. This training will enable graduates to enter professional life at this first level university research laboratories and pharmaceutical industry research and development centers. The training will also enable graduates to pursue academic Master's studies in Molecular and Cellular Biology and Health, a new and innovative discipline in which there is a marked shortage of qualified graduates.

D - Regional and national employability potential (Required field)

Students with a Bachelor's degree in Biology can go on to study for a Master's degree in Life Sciences, or even a Doctorate in Molecular and Cellular Biology (research courses: Biochemistry, Molecular and Cellular Biology, Biological Engineering, Recombinant DNA Biotechnology, Proteomics and Genomics). Career opportunities are highly promising, with access to high-demand niches such as :

- Advanced technician careers after Bac+3 ;
- Engineering in research laboratories and the pharmaceutical, agrifood or biotechnology industries after 5 years' higher education;
- Teaching and research activities in universities, research organizations or the private sector, in almost all areas of bio-sensitivity (viruses, cancer, rare diseases...), after Bac+8 (Doctorat). And finally, with complementary training at various levels:
- Sales professions (medical sales representatives, technical sales representatives, scientific equipment , etc.);
- Consulting professions (consultants, experts for law firms or institutions) ;
- Science journalism.

E - Gateways to other specialties (Required field)

Molecular Biology students can choose from variety of pathways; - Biochemistry

- Microbiology
- Pharmacology

F - Expected training performance indicators (Mandatory field)

(Viability criteria, success rates, employability, graduate follow-up, skills attained, etc.)

Pedagogical follow-up will be carried out in accordance with current regulations:

- Written tests for each teaching
- Practical tests to check mastery of practical work
- Oral presentation of personal work
- Make-up test in the event student deferment
- Acquisition a unit, semester or year if the student obtains an average equal to or higher than 10/20.

***Assessment methods:** exams, tutorials, homework, practical work and EMD.

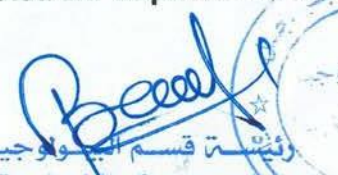
4 – Moyens humains disponibles

A : Capacité d'encadrement (exprimé en nombre d'étudiants qu'il est possible de prendre en charge) : 50 étudiants

B : Equipe pédagogique interne mobilisée pour la spécialité : (à renseigner et faire viser par la faculté ou l'institut)

Nom, prénom	Diplôme graduation	Diplôme de spécialité (Magister, doctorat)	Grade	Matière à enseigner	Emargement
RECHRECHE Hocine	Biochimie	Biologie Cellulaire- Biologie Structurale et Microbiologie	MCA	Fondements de la biologie moléculaire	
KEBIECHE Mohamed	Biochimie	Biochimie	MCA	Techniques préparatives et analytiques des macromolécules I	
ALYANE Mohamed	Biochimie	Toxicologie	MCB	Techniques préparatives et analytiques des macromolécules II	
DERAI El-hadjela	Biochimie	Biochimie appliquée	MAA	Structure et fonction des macromolécules	
BOUHAFS Leila	Biochimie	Immunologie appliquée	MAA	Signalisation et régulation de l'activité génique	
BENGUEDOUAR Lamia	Biochimie	Pharmacochimie	MAA	Enzymologie	
BOUTENNOUNE Hanane	Biochimie	Immunologie moléculaire	MAA	Anglais	
ABBES Arbia	Contrôle de qualité et analyse	Techniques Immunochimiques et Contrôle des aliments	MAA	Génie génétique	
BENSAM Moufida	Biochimie	Biologie moléculaire	MAA	Sciences de la vie et Société	
BENSEGHIER Salima	Génétique	Génétique moléculaire	MAA	Eléments de génétique moléculaire des micro-organismes	
KIHEL Nadjib	Chimie	Chimie pharmaceutique	MCB	Bioinformatique	

Visa du département


 رئيسة قسم البيولوجيا
 الجزيئية والخلوية
 بن قدار لمياء

Visa de la faculté ou de l'institut

عميد كلية علوم الطبيعة والحياة
 أ.د. السعيد لغوش


C: External teaching team mobilized for the specialty: (to be completed and endorsed by the faculty or institute) : **None**

Last name, first name	Establishment of attachment	Diploma graduation	Specialty diploma (Magister, doctorate)	Grade	Matter for teach	Registration
/						
/						
/						
/						

Department endorsement

Faculty or institute endorsement

D: Overall summary of human resources mobilized for the specialization (L3) :

Grade	Internal workforce	External workforce	Total
Teachers	0	-	0
Senior lecturers (A)	2	-	2
Senior lecturers (B)	2	-	2
Senior assistant (A)	7	-	7
Senior assistant (B)	0	-	0
Other (*)	-	-	-
Total	11	-	11

(*) Technical and support staff

5 - Equipment specific to specialty

A- Teaching laboratories and equipment : List of existing teaching equipment for the practical work involved in the proposed training course (1 list per laboratory).

Laboratory name: Student **Chromatography LABORATORY I**

capacity :

15

N°	Equipment name	Number	Comments
1	HPLC /LC-20AT/SPDAV (SHIMADZU)	1	
2	Deaerator	1	
3	DELL microcomputer	1	
4	Printer	1	
5	HPLC accessories: syringes, C18, C24 columns, HPLC solvents...		
6	Workbenches		

Laboratory name: Student **Chromatography LABORATORY II**

capacity :

15

N°	Equipment name	Number	comments
1	GCMS-QP 2010 (SHIMADZU)	1	
2	Gas chromatograph	1	
3	Mass spectrometry (coupled GC)	1	
4	Computer with substance database (terpenes, polyphenols, hormones, etc.)	1	
5	Accessories for CPG		

Laboratory name: Student **FINE ANALYSIS LABORATORY**

capacity :

15

N°	Equipment name	Number	Comments
1	Atomic absorption (AA-6200)	1	
2	Desiccant oven	1	
3	Acetylene bottle	1	
4	Computer+ Data bank+printer	1	
5	Accessories Atomic absorption		
6	UV-visible spectrophotometer	1	

Laboratory name: Student

LABORATORY: MOLECULAR BIOLOGY

capacity :

32

N°	Equipment name	Number	comments
1	PCR	1	
2	memmert water bath	2	
3	Balance	2	
4	colony counter	2	
5	Freezer -20	16	
6	Refrigerator	2	
7	Oven	4	
8	Oven	2	
9	Microbiological hood	1	
10	Bunsen burner	20	
11	UV table (DNA)	2	
12	Horizontal electrophoresis cuvettes	3	
13	Vertical electrophoresis tanks	2	
14	UV-visible spectrophotometer	1	
15	Benchtop centrifuge	1	
16	Complete set of micropipettes	2	

Laboratory name: Student

BIOCHEMISTRY (2 LABORATORIES)

capacity :

32

N°	Equipment name	Number	comments
1	25µl micropipette	1	
2	Micropipette 100µl	1	
3	Micropipette 1000µl	1	
4	memmert water bath	1	
5	Teflon-coated bain-marie	1	
6	Balance	1	
7	Centrifuge	1	
8	Electrophoresis tank+applicator	2	
9	Hot plate (Cinarec)	1	
10	Hot plate/resistor	1	
11	Visible spectrophotometer (Ultrospec 100)	1	
12	pH meter HANNA	1	

Laboratory name: Student **Toxicology**

capacity :

32

N°	Equipment name	Number	comments
N°	Designation	LABO/1	
1	Micropipette 100µl	1	
2	Balance	1	
3	pH meter HANNA	1	
4	bain-marie	1	
5	centrifuge	1	
6	ENIEM refrigerator	1	
7	HEIDOLF heated magnetic stirrer	1	
8	vortex mixer	1	
9	Hood	1	
10	Dryer	1	
11	Projector	1	
12	dissecting kit	1	
13	Microscopes	5	
14	Rotavapor+pump	1	

Laboratory name: Student **MICROBIOLOGY (2 LABORATORIES)**

capacity :

32

N°	Equipment name	Number	comments
1	Microbiological hood	2	
2	memmert water bath	2	
3	Balance	2	
4	colony counter	2	
5	Optical microscope	16	
6	ENIEM refrigerator	2	
7	Oven	4	
8	Oven	2	
9	Bunsen burner	44	

B- Internships and on-the-job training (see agreements / conventions) :

None

Location	Number of students	Length of internship

C- Documentation available at the establishment specific to the proposed training course (Mandatory field) :

- Central University Library
- Faculty of Science Library
- LMD Library
- CERIST database
- LMD Internet room

D- Personal workspaces and ICT available at departmental and faculty level :

An LMD area has been specially designed for LMD students from the very first year. It includes Internet computer rooms.

II - Semester organization chart (6-semester fact sheets)

(including the appendices to the domain and sector common-core decrees)

Order no. 498 of July 28, 2013 setting the curriculum for the common core of bachelor's degrees in the "Natural and Life Sciences" field.

Semester 1: (Common core in the "Natural and Life Sciences" field)

Teaching units	Material		Credits	Coefficients	Weekly hours			VHS (15 weeks)	Other	Evaluation mode			
	Code	Title			Courses	TD	TP			CC*.		Review	
U E Fundamental Code: UEF 1.1 Credits: 15 Coefficients: 7	F 1.1.1	General and organic chemistry	6	3	1h30	1h30	1h30	67h30	60h00	x	40%	x	60%
	F 1.1.2	Cell Biology	9	4	1h30	1h30	3h00	90h	90h00	x	40%	x	60%
U E Methodology Code: UEM 1.1 Credits: 8 Coefficients: 4	M 1.1.1	Mathematics Computer Statistics	5	2	1h30	1h30	-	45h00	60h00	x	40%	x	60%
	M 1.1.2	Communication Techniques and d'Expression 1 (in French)	3	2	1h30	1h30	-	45h00	45h00	x	40%	x	60%
U E Discovery Code: UED 1.1 Credits: 5 Coefficients: 3	D 1.1.1	Geology	5	3	1h30	-	3h00	67h30	60h00	x	40%	x	60%
U E Transversal Code: UET 1.1 Credits: 2 Coefficients: 1	T 1.1.1	Universal History of Biological Sciences	2	1	1h30	-	-	22h30	45h00	x			
Total Semester 1			30	15	9h00	6h00	7h30	337h30	360h				

Other*= Complementary work in semester consultation; CC* = Continuous assessment

Semester 2 Common core of the "Natural and Life Sciencesfield)

Teaching units	Materials		Credits	Coefficients	Hourly volume weekly			VHS	Other	Evaluation mode			
	Code	Title			Courses	TD	TP			CC*.		Review	
U E Fundamental Code: UEF 2.1 Credits: 22 Coefficients: 9	F 2.1.1	Thermodynamics and solution chemistry	6	3	1h30	1h30	1h30	67h30	60h	x	40 %	x	60 %
	F 2.1.2	Plant Biology	8	3	1h30	-	3h00	67h30	90h	x	40 %	x	60 %
	F 2.1.3	Animal Biology	8	3	1h30	-	3h00	67h30	90h	x	40 %	x	60 %
U E Methodology Code: UEM 2.1 Credits: 6 Coefficients: 4	M 2.1.1	Physics	4	2	1h30	1h30		45h00	45h	x	40 %	x	60 %
	M 2.1.2	Communication Techniques and d'Expression 2 (in English)	2	2	1h30	1h30	-	45h00	45h	x	40 %	x	60 %
U E Transversale Code: UET 2.1 Credits: 2 Coefficients: 1	T 2.1.1	Working methods	2	1	1h30	-	-	22h30	25h	x			
Total Semester 2			30	14	10h30	4h30	7h30	315h	355h				

Other*= Complementary work in semester consultation; CC = Continuous assessment.

Semester 3: (Common core in the "Natural and Life Sciencesfield)

Teaching units	Materials	Credits	Coefficient s	Weekly hours			VHS (15 weeks)	Other	Evaluation mode			
	Title			Courses	TD	TP			CC*.		Review	
U E Fundamental Code : UEF 2.1.1 Credits: 8 Coefficients: 3	Zoology	8	3	2 x 1h30	1h30	1h30	90h00	45h00	x	40 %	x	60%
U E Fundamental Code : UEF 2.1.2 Credits: 16 Coefficients: 6	Biochemistry	8	3	2 x 1h30	1h30	1h30	90h00	45h00	x	40 %	x	60%
	Genetics	8	3	2 x 1h30	2 x 1h30	-	90h00	45h00	x	40 %	x	60%
U E Methodology Code: UEM 2.1.1 Credits: 2 Coefficients: 1	Communication and Expression Techniques (in English)	2	1	1h30	-	-	22h30	20h00			x	100%
U E Methodology Code: UEM 2.1.2 Credits: 2 Coefficients: 1	Working methods	2	1	1h30	-	-	22h30	20h00			x	100%
U E Discovery Code: UED 2.1.1 Credits: 2 Coefficients: 2	Biophysics	2	2	1h30	1h30	1h30	67h30	10h00	x	40 %	x	60%
Total Semester 3		30	13	13h30	7h30	4h30	382h30	185h				

Other*= Complementary work in semester consultation; CC* = Continuous assessment.

Semester 4: (Common core in the "Natural and Life Sciencesfield)

Teaching units	Materials	Credits	Coefficients	Weekly hours			VHS (15 weeks)	Other	Evaluation mode			
	Title			Courses	TD	TP			CC*.		Review	
U E Fundamental Code: UEF 2.2.1 Credits: 8 Coefficients: 3	Botany	8	3	2 x 1h30	1h30	1h30	90h00	45h	x	40%	x	60%
U E Fundamental Code: UEF 2.2.2 Credits: 14 Coefficients: 5	Microbiology	8	3	2 x 1h30	1h30	1h30	90h00	45h	x	40%	x	60%
	Immunology	6	2	1h30	1h30	-	45h00	37h	x	40%	x	60%
U E Methodology Code: UEM 2.2.1 Credits: 4 Coefficients: 2	General ecology	4	2	1h30	1h30	1h30	67h30	20h	x	40%	x	60%
U E Methodology Code: UEM 2.2.2 Credits: 4 Coefficients: 2	Biostatistics	4	2	1h30	1h30	-	45h00	37h	x	40%	x	60%
Total Semester 4		30	12	10h30	7h30	4h30	337h30	184h				

Other*= Complementary work in semester consultation; CC* = Continuous assessment.

Semester 5 :

Teaching	VHS	V.H weekly				Coeff	Credits	Evaluation	
	14-16 wks	C	TD	TP	Other			Continuous (40%)	Examination (60%)
Fundamental EU									
UEF 3.1.1(O/P) Foundations of the molecular biology	90h00	3h00	3h00	-	6h00	4	8	X	X
Subject 1: Fundamentals of biology molecular									
UEF 3.1.2(O/P) : Elements of genetics of micro-organisms	90h00	3h00	3h00	-	6h00	4	8	X	X
Subject 1: Elements of genetics of micro-organisms									
EU methodology									
UEM 3.1.1(O/P): Preparative and analytical techniques for macromolecules I	67h30	3h00		1h30	3h 30	3	6	X	X
Topic 1: Preparatory techniques and macromolecule analysis I									
EU discovery									
UED3.1.1 (O/P) : Structure and function Macromolecules	67h30	3h00	1h30		2h00	3	5	X	X
Subject 1: Structure and function of macromolecules									
Cross-disciplinary courses									
UET3.1.1 (O/P) : Scientific English	22h30	1h30				1	3		X
Subject1 : Scientific English									
Total Semester 5	337h30	13h30	7h30	1h30	17h30	15	30		

Semester 6 :

Teaching	VHS	V.H weekly				Coeff	Credits	Evaluation	
	14-16 wks	C	TD	TP	Other			Continuous (40%)	Examination (60%)
Fundamental EU									
UEF 3.2.1(O/P) : Genetic engineering	90h00	3h00	3h00	-	-	4	8	X	X
Subject: Genetic engineering									
UEF 3.2.2(O/P) : Signalling and regulation of gene activity	67h30	3h00	1h30	-	1h30	4	8	X	X
Subject: Signalling and control of gene activity									
EU methodology									
UEM3.2.1(O/P): Bioinformatics and preparative and analytical techniques Macromolecules							6		
Subject 1: Bioinformatics	45h00	1h30	-	1h30	1h30	2	3	X	X
Topic 2: Preparatory techniques and Macromolecule Analytics II	45h00	1h30	-	1h30	1h30	2	3	X	X
EU discovery									
UED3.2.1 (O/P) Enzymology	67h30	3h00	1h30		3h00	2	5	X	X
Subject: Enzymology									
Cross-disciplinary courses									
UET 3.2.1 (O/P) : Life Sciences and Company	22h30	1h30	-	-	-	1	3		X
Subject1 : Life Sciences and Society									
Total Semester 6	337h30	13h30	6h00	3h00	07h30	15	30		

Overall summary of training: (indicate the overall VH separated courses, TD,TP... for the 06 teaching semesters, for the different types of UE)

VH \ EU	UEF	UEM	UED	UET	Total
Courses	540	270	135	90	1035
TD	382,5	135	67,5	0	585
TP	270	90	67,5	0	427,5
Personal work	854,4	389,25	145	70	1458,65
Other (please specify)	-	-	-	-	-
Total	2046,9	884,25	415	160	3506,15
Credits	115	38	17	10	180
% in credits for each EU	63,88%	21,11%	9,44%	5,55%	100%

