PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION
AND SCIENTIFIC RESEARCH

HARMONIZATION
MASTER TRAINING OFFER

ACADEMIC/PROFESSIONALISING

Establishment	Faculty / Institute	Department
Universityof Khemis Miliana	**Faculty of Life and Natural Sciences and Earth Sciences (FLNS and ES)**	**Agricultural Sciences**

Domain:Science of Nature and Life

Field:Agricultural Sciences

Specialty: Animal Production

University year: 2015/2016

الجمهورية الجزائرية الديمقراطية الشعبية

وزارة التعليم العالي والبحث العلمي

مواءمة

عرض تكوين ماستر

أكاديمي / مهني

المؤسسة	الكلية/ المعهد	القسم
جامعةالجيلاليبونعامة خميس مليانة	كلية علوم الطبيعة والحياةوعلومالأرض	علوم زراعية

الميدان :علوم الطبيعة والحياة

الشعبة :علوم زراعية

التخصص :إنتاج حيواني

السنة الجامعية: 2015/2016

SUMMARY

I – Master's identity card

1- University of Djilali Bounaama Khemis Miliana

Faculty (or Institute): Faculty of Nature and Life Sciences and Earth Sciences (FSNVST).
Department: Agricultural Sciences

2 - Partners of the training *:

Other university institutions:

Businesses and other socioeconomic partners:
Technical Institute of Elevages (ITELV).
National Center for Artificial Insemination and Genetic Improvement (CNIAAG).
Giplait Arib Ain Defla.
Laiterie Wanis Ain Defla.
The pilot is Ben Brik.
The pilot is Bessami.

The international partners:

* = Appendix to the training conventions

3- Context and objectives of training

A – Access Conditions (indicate the licensing specialties that can give access to the Master)
Bachelor in animal production.

B – Training objectives (targeted skills, pedagogical knowledge acquired at the end of the training – maximum 20 lines)

Animal production, with all of these branches, namely, beef, sheep, goat, beekeeping, poultry and canine, remains neuralgic given its quality as a supplier of food products of animal origin. As a result, animal production can experience real development, which would go through the formation of high-level cadres capable of developing scientific reflection in order to build a basis for sustainable development.

The proposed training is motivated, on the one hand, by the concern to a real development of livestock production that is necessary, given the current conjecture, in order to reduce the dependence on hydrocarbons whose effects are beginning to be known. On the other hand, the training will provide a set of technical, scientific and economic knowledge that will allow for in-depth reflection and provide solutions in terms of promoting domestic production and achieving food self-sufficiency.

This Master's project in Animal Production is therefore part of a future approach and sustainable development of all animal chains.

C – Profiles and professional skills targeted (in terms of professional insertion – maximum 20 lines):

After successful completion of the Bachelor's Degree in Animal Production, the student entitles to enroll in the first year of the Master's degree in animal production. The orientation towards this course will therefore be made at the end of the license after the decisions of the assessment and orientation committee.
The proposed training, Master in Animal Production, focused on animal chains and their products, integrating modern techniques, where computer science plays a leading role. This training should meet current and future needs in animal science and technology research.
This Master aims to train specialists in the different sectors of animal production (milk, red and white meat, beekeeping products, cunnicoles and poultry, etc.), integrating the up and down aspects.
The future cadres thus trained will be able to analyze, design and propose programmes for the development of these chains, as part of sustainable development, and can also provide solutions tailored to technical problems related to the practice of livestock farming in Algeria.

D - Regional and National Employability Potential of Graduates

The Wilaya of Ain Defla has significant potential in the field of livestock farming, however, the results achieved in this field remain below the objectives to be achieves. As such, the proposed training can play an important role in contributing to the development of the agricultural sector and, more specifically, the livestock sector.
Ain Defla, known as a milk basin, remains an agricultural area because it is located in the plain of the Upper Cheliff in its irrigated perimeter. This area has many farms practicing different livestock activities (beef, sheep, poultry, beekeeping, rabbit farming, etc.).

Several farms operating in the field of livestock production are located in the region, such as the Ben Brik pilot farm and the Bessami pilot farm, which are specialized in breeding, fattening of bulls as well as milk production. The region also has processing companies, including Sid Lakhdar's Arib dairy and Khemis Miliana's Wanis. Other farms are oriented towards the industrial production of chicken meat as well as consumer eggs.

In view of all its potential, our Master's in Animal Production training offer will offer quality training in order to equip these companies with high-level skills capable of addressing concerns in the field of animal products and their technologies.

In terms of national employment potential, they are important, in the private sector, given the boom that has experienced the processing sector of animal products (lactation, cheese, biscuits, processing of red and white meats, honey and derivative products, etc.). This sector, which includes production and agro-food, can develop through the introduction of modern techniques in the field of livestock farming, thus generating a lot of jobs and preparing specialists called to submit reflections in view of the new challenges facing our country.

E – Passages to other specialties

At the moment, it is too early to draw up a scheme of the bridges leading to the other specialties, due to a lack of data on the different paths proposed by the universities.

F – Indicators for training monitoring

The objective of the mechanism is to diversify the control arrangements in order to evaluate the students' skills as widely as possible.
In this context, we will evaluate:
the autonomy of the student;
regular monitoring of knowledge acquisition;
the acquisition of oral expression;
Capacity for teamwork and synthesis work;
The control of the student's capabilities and not of his knowledge.

The distribution between the different forms of knowledge control is as follows:
Control of knowledge: 40%
Oral expression: 20%
Personal work: 20%
Analysis and synthesis: 20%

G – Management Capacity (give the number of students that can be supported)

A : Teachers of the establishment involved in the specialty:

4 – Moyens humains disponibles

A : Enseignants de l'établissement intervenant dans la spécialité :

Nom, prénom	Diplôme graduation + Spécialité	Diplôme Post graduation + Spécialité	Grade	Type d'intervention *	Emargement
KOUACHE Ben Moussa	Ingénieur d'état en Agronomie spécialité Production Animale	Magister en Agronomie spécialité Production Animale	MAA	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	
MEKHATI Mohamed	Ingénieur d'état en Agronomie spécialité Production Animale	Magister en Agronomie spécialité Production Animale	MAA	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	
MOUSS Abdelhak Karim	Ingénieur d'état en Agronomie spécialité Production Animale	Magister en Agronomie spécialité Sciences Animales	MAA	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	
GHOZLANE Mohamed Khalil	Vétérinaire	Magister Reproduction Animale	MAA	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	
BELOUAZNI Ahmed	Ingénieur d'état en Biologie	Magister en Sciences des Eaux et Bioclimatologie	MAA	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	
HAMIDI Djamel	Ingénieur d'état en Agronomie spécialité Phytotechnie	Magister en Sciences et Techniques des Productions Végétales	MAB	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	
DJEZZAR Miliani	Ingénieur d'état en Agronomie spécialité Zoologie	Magister en Zoologie, Doctorat es en Zoologie	MCB	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	
MOSTEFA SARI Fouzia	Ingénieur en Génie Biologie	Magister en Biotechnologie Végétale	MAA	Cours, TD, TP, Encadrement de stages, Encadrement de mémoires	

*** = Courses, TD, TP, Internship supervision, Memory supervision, other (to be specified)**

B : External supervision:

Attached institution:

Last name First Name	graduation diploma + Specialty	Post-graduation diploma + Specialty	Grade	Intervention type *	sign-in

Attached institution:

Last name First Name	graduation diploma + Specialty	Post-graduation diploma + Specialty	Grade	Intervention type *	sign-in

Attached institution:

Last name First Name	graduation diploma + Specialty	Post-graduation diploma + Specialty	Grade	Intervention type *	sign-in

*** = Courses, TD, TP, Internship supervision, Memory supervision, other (to be specified)**

5 – Equipment specific to the specialty

A- Pedagogical Laboratories and Equipment: Sheet of existing pedagogical equipment for the planned training (1 sheet per laboratory)

Laboratory Title: Physics
Student capacity: 20

N°	Equipment Title	Number	Observation
01	Uncertainties	05	
02	Newton's Second Law	02	
03	Rectilinear motion	02	
04	The stiffness of a spring	05	
05	Freefall	01	
06	Electricity uncertainty	04	
07	Fields and electrical potential	04	
08	Oscilloscope	04	
09	Ohm law	04	
10	Charging and discharging a capacitor	04	
11	Circuits R.L.C	04	

Laboratory Title: Chemistry
Student capacity: 20

N°	Equipment Title	Number	Observation
01	Laboratory ph meter	03	
02	Laboratory conductivity meter	02	
03	Portable ph meter	02	
04	Portable conductometer	02	
05	Oven	01	
06	Flame photometer	01	
07	Balloon heater	02	
08	Hot plate	02	
09	Portable scale	02	
10	Analytical balance	01	
11	Electronic thermometer	04	
12	Vacuum pump	02	
13	Visible UV spectrophotometer	01	
14	Gas chromatography	01	
15	Portable oximeter	01	
16	Water bath	01	
17	Case for water analysis	01	

N°	Equipment Title	Number	Observation
01	Hematocrit	05	
02	Microscope	02	
03	Hot plate	01	
04	Electronic scale	04	
05	Ph meter	List	
06	Chromatography tank	List	
07	Electrophoresis	01	
08	Centrifuge	03	
09	Water bath	02	

Laboratory Title: Biochemistry
Student capacity: 20

N°	Equipment Title	Number	Observation
01	Autoclave	02	
02	Water bath	01	
03	Incubator oven	02	
04	Chromatography tank	03	
05	Microscope	12	
06	Magnifying glass	10	
07	Microtome	20	
08	Oven	01	
09	Potometer	01	
10	Distiller	01	
11	Analytical balance	01	
12	Water bath	01	

Laboratory Title: Plant Biology
Student capacity: 20

Laboratory Title: Plant Biology and Physiology
Student capacity: 20

N°	Equipment Title	Number	Observation
01	Microscope	20	
02	Analytical balance	06	
03	Dissection kit	12	
04	Spectrophotometer	01	
05	Vertical electrophoresis tank	01	
06	Thin-layer chromatography	05	
07	Overhead projector	02	
08	Slide device	01	
09	PH meter	06	
10	Electronic thermometer	08	
11	Hematocrit apparatus	01	
12	Centrifuge	02	
13	Water bath	03	
14	Magnifying glass	10	
15	Oven	02	
16	Refrigerator	01	
17	Balloon heater	04	
18	Hot plate	05	
19	Magnetic stirrer	04	
20	Biology model	20	
21	Prepared blade	A series	
22	Clumsy cell	10	

Laboratory Title: Hydraulics
Student capacity: 20

N°	Equipment Title	Number	Observation
01	Venturi tube	01	
02	Apparatus for measuring loss of load	02	
03	Rain simulator	01	
04	Rolling speed measuring device (Reynolds)	01	
05	Hydraulic channel	01	
06	Centre of thrust	01	
07	Apparatus for measuring flow through holes	01	
08	Constant load permeometer	01	
09	Field Infiltometer	01	
10	Variable load permeometer	01	
11	Pércision scales	01	

Laboratory Title: Geology, Mapping
Student capacity: 20

N°	Equipment Title	Number	Observation
01	Manual curvometer	05	
02	Digital curvometer	02	
03	Planimeter	01	
04	Compass	04	
05	Geological maps	List	
06	Topographic maps	List	
07	Double decameter	01	
08	Caliper	03	
09	Electrical probe	02	
10	Digitization table	01	
11	Manual curvometer	05	
12	Digital curvometer	02	
13	Planimeter	01	
14	Compass	04	
15	Geological maps	List	
16	Topographics maps	List	
17	Double decameter	01	
18	Vernier Caliper	03	
19	Electrical Probe	02	
20	Digitization table	01	

Laboratory Title: Soil
Student capacity: 20

N°	Intitulé de l'équipement	Nombre	Observation
01	Auger	02	
02	Shredder	01	
03	Precision scale	01	
04	Robinson's pipette	01	
05	Mechanical shaker	01	
06	Magnetic stirrer	01	
07	Centrifuge	01	
08	Field Infiltrometer (double ring)	01	
09	Sphygmomanometers	01	
10	PH meter	01	
11	Flame photometer	09	
12	Mineralizer	01	
13	UV Spectrophotometer	01	
14	Series of sieves	02	
15	Conductivity meter	02	
16	Nitrogen dosing logs	03	
17	GPS	01	

B- Internship sites and company training:

Training place	Number of students	Training period
Technical Institute of Livestock (TI of L)		
National Center for Artificial Insemination and Scientific Research (CNIAAG)		
Ben Brik Pilot Farm		
Bessami Pilot Farm		
Arib Dairy		
Wanis Dairy		

C- Documentation available at the institution specific to the proposed training (Required field):

The library has extensive documentation in the following disciplines:
Statistics, experimentation, physics, chemistry, biochemistry, microbiology, electricity, biology, plant and animal physiology, anatomy, genetics, general hydrostatics, hydrogeology, agronomy, irrigation-drainage, pedology, economics, remote sensing and GIS, economics law, english, french and dissertation.

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

- Experimental station of the faculty ;
- The faculty's set of teaching laboratories ;
- Research laboratory of the "Water, Rock and Plants" institutes
- Institute's research laboratory
- Laboratoire de recherche de l'Institut : Agricultural Production and Natural Resources Development ;
- Audio – visual services.

E- Master's support research laboratory (ies):

Head of the laboratory
N° Laboratory approval
Date : Opinion of the head of laboratory:

Head of the laboratory
N° Laboratory approval
Date : Opinion of the head of laboratory:

II - Semestral Organization of Teaching

(Prayer to present the 4 semesters' papers)

1 – Semester 1

Teaching unit	Semester Hourly Volume (SHV)	Weekly Volume of Hours				Coefficient	Credits	Mode of Evaluation	
	15 Weeks	Course	Directed Work	Practical Work	Other			Continuous (40%)	Examination (60%)
Fundamental Teaching Unit						**9**	**18**		
FTU1 (O/P)									
Matter 1 : Food and nutrition for pets	67h30	1h30	1h30	1h30	82h30	3	6	X	X
FTU2 (O/P)									
Matter 1 : Cattle breeding	67h30	1h30	1h30	1h30	82h30	3	6	X	X
Matter 2 : Sheep and goat breeding	67h30	1h30	1h30	1h30	82h30	3	6	X	X
Methodological Teaching Unit						**5**	**9**		
MTU1 (O/P)									
Matter 1 : Experimentation and statistical analysis	60h00	1h30	1h30	1h00	65h00	3	5	X	X
MTU2 (O/P)									
Matter 1 : Pastoralism	45h00	1h30	1h30	0	55h00	2	4	X	X
Discovery Teaching Unit						**2**	**2**		
DTU1(O/P)									
Matter 1 : Training courses	45h00	3h00	0	0	5h00	2	2	X	
Transversale Teaching Unit						**1**	**1**		
TTU1(O/P)									
Matter 1 : Communication	22h30	1h30	0	0	2h30	1	1	X	X
Total semester 1	**375h**	**180h**	**112h30**	**82h30**	**375h**	**17**	**30**		

2 – Semester 2

Teaching unit	Semester Hourly Volume (SHV)	Weekly Volume of Hours				Coefficient	Credits	Mode of Evaluation	
	15 Weeks	Course	Directed Work	Practical Work	Other			Continuous (40%)	Examination (60%)
Fundamental Teaching Unit						**9**	**18**		
FTU1 (O/P)									
Matter 1 : Rabbit farming	67h30	1h30	1h30	1h30	82h30	3	6	X	X
Matter 2 : Poultry farming	67h30	1h30	1h30	1h30	82h30	3	6	X	X
FTU2 (O/P)									
Matter 1 : Beekeeping	67h30	1h30	1h30	1h30	82h30	3	6	X	X
Methodological Teaching Unit						**5**	**9**		
MTU1 (O/P)									
Matter 1 : Fodder crops	60h00	1h30	1h30	1h00	65h00	3	5	X	X
MTU2 (O/P)									
Matter 1 : English	45h00	1h30	1h30	0	55h00	2	4	X	X
Discovery Teaching Unit						**2**	**2**		
DTU1(O/P)									
Matter 1 : Production of a scientific document	45h00	3h00	0	0	5h00	2	2	X	
Transversale Teaching Unit						**1**	**1**		
TTU1(O/P)									
Matter 1 : Legislation	22h30	1h30	0	0	2h30	1	1	X	X
Total semester 2	**375h**	**180h**	**112h30**	**82h30**	**375h**	**17**	**30**		

3- Semestre 3:

Teaching unit	VHS	Weekly hourly volume				Coeff	Credits	Assessment method	
	15 sem	C	TD	TP	Others			Continued	Review
Fundamental teaching units						**9**	**18**		
FTU1(O/P)									
Mater 1 : Genetic improvement of domestic animals	67h30	1h30	1h30	1h30	82h30	3	6	X	X
Mater 2 : Reproductive Biotechnology	67h30	1h30	1h30	1h30	82h30	3	6	X	X
UEF2(O/P)									
Mater 1 : Camel and horse breeding	67h30	1h30	1h30	1h30	82h30	3	6	X	X
Methodological teaching units						**5**	**9**		
MTU1(O/P)									
Mater 1 : Livestock equipment	60h00	1h30	1h30	1h00	65h00	3	5	X	X
UEM2(O/P)									
Mater 1 : Food Technology	45h00	1h30	1h30	0	55h00	2	4	X	X
Discovery Teaching Units						**2**	**2**		
UED1(O/P)									
Mater 1 : Fish farming	45h00	3h00	0	0	5h00	2	2	X	X
Cross-curricular teaching units						**1**	**1**		
CTU1(O/P)									
Mater 1 : Entrepreneurship	22h30	1h30	0	0	2h30	1	1	X	X
Total Semester 3	**375h**	**180h**	**112h30**	**82h30**	**375h**	**17**	**30**		

4- Semester 4 :

Domain:Science of Nature and Life
Field:Agricultural Sciences
Specialty: Animal Production

Internship in a company sanctioned by a dissertation and a defense.

	Weekly hourly volume	Coeff	Credits
Personal work			
Company internship			
Seminars			
other (explain, list,)			
Total semester4			

5- Overall summary of the training

UE / VH	UEF	UEM	UED	UET	Total
Course					
Directed work's					
Practical work					
Personal work					
other (explain, list,)					
Total					
Credits					**120**
% in credits for each teaching unit					

III - Detailed programme by subject

(Detailed page by subject)

Master's Degree: Animal Production
Semester: I
Title of the EU: UEF 1 Subject 1.
Title: Food and nutrition of pets.
Number of credits: 6
Coefficients: 3

Teaching objectives
This teaching aims to shed light on animal nutrition as well as the problems encountered in the field.

Prior knowledge recommended
The student must master aspects related to animal physiology (physiology of digestion) as well as knowledge of the main foods intended for livestock.

Content (indicate the detailed content of the program in presence and personal work)
Chapter I: Determination of the needs of animals.
Chapter 2: Physiological Bases of Nutrition.
Chapter 3: Food efficiency.
Chapter IV: Rationalization of animals.

Stages + visit.

Evaluation methods: Continuous and EMD.

References

JARRIGE P ET AL, 1995. Nutrition des ruminants domestiques, INRA édition, 92p.
CRAPLET C., THIBIER M., 1984. Le mouton : production, reproduction, génétique, alimentation, maladies. Ed. Vigot, Paris, 575p.

Semester: I
Title of the EU: UEF 2 Subject 1.
Title of the article: Growing cattle.
Number of credits: 6
Coefficients: 3

Teaching objectives
To teach the student to know the different breeds of cattle as well as the techniques of conducting the breeding of the various breeds.

Prior knowledge recommended
Biology, animal physiology and zootechnics.

Content
Chapter I: The cattle breed in the world and in Algeria.
Chapter II: Milk production and milk control.
Chapter III: The production of meat.
Chapter IV: Evaluation of dairy and slaughter cattle

Internships + field trips + presentations.

Evaluation methods: Continuous and EMD.

References
Craplet C. et Thibier M., 1984. Le mouton : production, reproduction, génétique, alimentation, maladies. Ed. Vigot, Paris, 575p.
Barret, J.P., 1992. Zootechnie générale, agriculture d'aujourd'hui, Sciences, Technique, Applications. Edition Lavoisier Paris, 252 P.

Semester: I
Title of the EU: UEF 2 Subject.
Title: Sheep and goat breeding.
Number of credits: 6
Coefficients: 3

Teaching objectives
To teach the student to know the different breeds of sheep and goats as well as the techniques of conducting the breeding of the various breeds belonging to these species.

Prior knowledge recommended
Biology, animal physiology and zootechnics.

Content
Chapter I: The sheep breeds in the world and in Algeria.
Chapter II: The goat breeds in the world and in Algeria.
Chapter III: Food for sheep and goats.
Chapter IV: Milk production of sheep and goats.
Chapter V: Reproduction in sheep and goats.

Internships + field trips + presentations.

Evaluation methods: Continuous and EMD.

Références
SOLTNER D, 1993.Zootechnie générale, 2ème édition.Paris, maison ALFOST.
BLANCHIN, J. Y., 2005.Le logement du mouton – élevages allaitants.Institut de l'élevage.Edition France Agricole.

Semester: I
Title of the EU: EU1 Subject 1.
Title: Experimentation and Statistical Analysis.
Credits: 5
Coefficients: 3

Objectives of Education
Teach the student how to build a matrix of results as well as introduce him to the statistical reading of research results.

Prior knowledge recommended
Mathematics and software manipulation (Excel, SPSS, etc.)

Content
Chapter I: Calculation of the various statistical parameters (averages, type deviation, variance, etc.).
Chapter II: Construction of calculation matrices.
Chapter III: Statistical Analysis (comparison of averages, ANOVA, etc.)

Evaluation methods: Continuous and EMD.

References
JEAN-MARIE BOUROCHE ET GILBERT SAPORTA, 2006. L'Analyse des données, Paris, Presses Universitaires de France, 9ème édition, 125 p.
BRIGITTE ESCOFIER ET JEROME PAGES, 2008.Analyses factorielles simples et multiples ;objectifs, méthodes et interprétation, Dunod, Paris, 318 p.

Semester: I
Title of the EU: Economic and Monetary Union 2 Subject 1.
Title: Pastoralism.
Credits: 4
Coefficients: 2

Teaching objectives
To teach the student the different modes of farming existing in the steppe areas as well as the risk incurred by the intensification of the farming in these areas.

Prior knowledge recommended
Animal physiology, plant physiology and botany.

Content
Chapter I: Agricultural pastoral farming system
Chapter II: The Problem of Desertification
Chapter III: Study of the biometrics of the steppe (evolution of pastoral resources, pastoral value and pastoral productivity).
Chapter IV: Development of steppe paths.

Internships + field trips + presentations.

Evaluation methods: Continuous and EMD.

References

CHELLIG R., (1992). Les races ovines algériennes. Office des Publications Universitaires, Alger. 06 – 92 cod. : 1 04 35 80. 80 p.

BOUTONNET J.P., (1989). La spéculation ovine en Algérie, un produit clé de la céréaliculture. INRA-ENSAM Montpellier, série notes et documents n°90, 50p.

Semester: I
Title of the EU: UED 1 Subject 1.
Title: Training.
Credits: 2
Coefficients: 2

Teaching objectives

Connect the student with the various farms and companies that operate in the field of animal production.

Prior knowledge recommended

Farm management, microbiology and biochemistry.

Content of the subject

The workshop is run by teachers from the sector. The student receives a program of internship that will help to the objectives assigned to it.

Method of evaluation: Continuous.

References

Semester: I
Title of the EU: UET 1 Subject 1.
Title: Communication.
Credits: 1
Coefficients: 1

Teaching objectives

Analyze the objectives of internal and external communication and present the methodologies necessary to conduct the main communication actions

Prior knowledge recommended

The linguistic bases

Content

- Improving language skills.
- Methods of communication.
- Internal and external communication.
- Meeting techniques.
- Oral and written communication.

Evaluation Modes: Continuous and EMD

References

Workshop and seminar.

Semester: II
Title of the EU: UEF 1 Subject 1.
Title: Rabbit farming
Credits: 6
Coefficients: 3

Teaching objectives

Teach the student the knowledge of the different breeds used in rabbit breeding as well as the breeding conduct of this animal.

Prior knowledge recommended

Knowledge of animal physiology and biology.

Content

Chapter I: The Interest of Rabbit farming in Algeria and the World.
Chapter II: Main races used in Rabbit farming.
Chapter III: Nutrition and physiology of digestion in rabbits.
Chapter IV: Reproduction in the rabbit.
Chapter V: Planning of production in Rabbit farming
Internships + field trips + presentations.

Evaluation methods: Continuous and EMD.

References

SAMUEL BOUCHER et LOÏC NOUAILLE, 2002. Maladies des lapins : Manuel pratique, Paris, France Agricole Éditions, 271 p.

MICHEL COLIN et FRANÇOIS LEBAS, 1995. Le lapin dans le monde, Paris, Association Française de Cuniculture, 287 p.

Semester: II
Title of the teaching unit: UEF 2 Subject 2.
Title: Poultry farming.
Credits: 6
Coefficients: 3

Teaching objectives
Teach the student the different farming methods as well as the techniques used in poultry production, such as meat or laying.

Prior knowledge recommended
Knowledge of animal physiology and biology.

Content
Chapter I: Practice of poultry farming in Algeria and in the world.
Chapter II: Diet and physiology of digestion in poultry.
Chapter III: Reproduction and egg structure in poultry.
Chapter IV: Thermoregulation in poultry.

Internships + field trips + presentations.

Evaluation methods: Continuous and EMD.

References
YVES-FRANÇOIS KOYABIZO AHONZIALA, 2009.La poule, l'aviculture et le développement : Science et technique de base. Edition l'Harmattan.

AMADOU OUSMANE TRAORE, 2010. Guide technique et économique d'un élevage de poulets de chair. Edition l'Harmattan.

Semester: II
Title of the EU: UEF 2 Subject 1.
Title: Beekeeping.
Number of credits: 6
Coefficients: 3

Objectives of Education
Teach the student the techniques of beekeeping as well as the processes used to extract the products from the wheat.

Prior knowledge recommended
Knowledge of animal physiology and biology.

Content
Chapter I: Main characters defining the Hymenopters**.**
Chapter 2: The Importance of Bees.
Chapter 3: The General Aspects.
Chapter IV: Roles of the bee in the herd.
Chapter V: Products of the straw.
Chapter VI: Diseases of bees and their treatment.

Internships + field trips + presentations.

Evaluation methods: Continuous and EMD.

References

ETHEL EVA CRANE, 2013. The World History of Beekeeping and Honey Hunting, Routledge, 720 p.

MAURICE CHAUDIERE, 2003. Apiculture Alternative, édition Le Décaèdre,
JEAN-MARIE HOYOUX, 2002. Le vocabulaire de l'apiculteur, Presses Agronomiques de Gembloux, 104 p.

Semester: II
Title of the European Union: Economic and Monetary Union 1.
Title:Fodder crops
Credits: 5
Coefficients: 3

Teaching objectives
Teach the student the recognition of feed species and the annual management of its resources.

Prior knowledge recommended
Biology and Physiology.

Content
Chapter I: Primary feed species.
Chapter II: Methods of cultivation of feed.
Chapter III: Management of feed.
Chapter IV: Conservation of feed.

Internships + field trips.

Evaluation methods: Continuous and EMD.

References

DURU M., 2000. Le volume d'herbe disponible par vache : un indicateur synthétique pour évaluer et conduire un pâturage tournant, Inra prod. anim., 13, 5, 325-336.

DURU M., FIORELLI J.L et OSTy P.L., 1988. Propositions pour le choix et la maîtrise du système fourrager, Notion de trésorerie fourragère, Fourrages, 113, 37-56.

Semester: II
Title of the EU: Economic and Monetary Union 2 Subject 1.
Title: English.
Credits: 4
Coefficients: 2

Objectives of Education
Enable students to read and understand articles in English.

Prior knowledge recommended
Basic notions of the English language.

Content
Modern language program adapted to each group
Let the teacher choose an appropriate action.

Evaluation methods: Continuous and EMD.

References
Dictionnaire scientifique, ouvrages, revues ainsi que des publications en langue anglaise.

Semester: II
Title of the EU: UED 1 Subject 1.
Title: Creation of a scientific document.
Credits: 2
Coefficients: 2

Teaching objectives
Teach the student how to build his/her end-of-school memory.

Prior knowledge recommended
Methodological and linguistic knowledge.

Content
Construction of a summary, organization of a bibliographic research, exhibition of the results and presentation of a research study.
and exposed.

Method of evaluation: Continuous.

References
Use end-of-study projects assigned to each student in order to advance their work.

Semester: II
Title of the EU: UET 1 Subject 1.
Title: Legislation.
Credits: 1
Coefficients: 1

Teaching objectives
To initiate the learning of regulatory notions, definitions and origins of legal texts and knowledge of criminal consequences.

Prior knowledge recommended
All content of the training

Content of the subject

- General concepts of law (introduction to law, criminal law).
- Presentation of Algerian legislation (www.joradp.dz, references to texts).
- General regulations (consumer protection law, hygiene, labelling and information, food additives, packaging, branding, safety, preservation).
- Specific regulations (personal work, exposures).
- Control bodies (DCP, CACQUE, hygiene office, ONML).
- Standardization and Accreditation (IANOR, ALGERAC).
- International standards (ISO, codex alimentarius, NA, AFNOR)

Evaluation methods: Continuous and EMD.

References

Semester: III
Title of the teaching unit: fundamental teaching unit 1 matter 1.
Matter title: Genetic improvement of domestic animals.
Credits: 6
Coefficients: 3

Teaching objectives
Teach the student the main methods of genetic improvement of domestic animals.

Prior knowledge recommended
Notions in general genetics

Content of the subject
Chapter**I :** Elements of molecular genetics.
Chapter**II :** Inheritance of non-quantitative characters.
Chapter**III :** Inheritance of quantitative traits.
Chapter**IV :** Intra-breed selection.
Chapter**V :** crosses.

Evaluation method: ContinuedetContinuous average rating (CAR).

References
JUSSIAU R., MONTEMAS L., PAPET A., 2010. Amélioration génétique des animaux d'élevage, bases scientifiques, sélection et croisements. Educagri édition, 322p.
DUBUFFET A., POIRE F., PERIQUET G., 2005. Travaux dirigés en génétique des populations. Université François Rabelais, Tours et Université de Nice.

Semester: III
title of the teaching unit: fundamental teaching unit 1 matter 2.
Matter title : Reproductive Biotechnology.
Credits : 6
Coefficients : 3
Teaching objectives
Teach the student the basic knowledge used in the field of reproductive biotechnology.

Prior knowledge recommended
Animal physiology, biology and physiology of reproduction and notions in general genetics.
Content of the subject
Chapter I: Basics of biotechnology in the field of reproduction.
Chapter II :Artificial insemination.
Chapter III :Freezing of male and female gametes.
Chapter IV :Embryo transfer.
Chapter IV :Cloning.
Lectures.
Evaluation method: Continuous and EMD.

References
BEHBOODI E., ANDERSON G.B., BONDURANT R.H., CARGILL S.L., KREUSCHER B.R., MEDRANO J.F., MURRAY J.D., 1995. Birth of large calves that developed from in vitro-developed bovine embryos. Theriogenology, 44, 227-232. *(Livres et polycopiés, sites internet, etc).*

COLLEAU J.-J., 1985. Efficacité génétique du transfert d'embryons dans les noyaux de sélection chez les bovins laitiers.Génet.Sél.Evol., 17, 499-538.
CHUPIN D., 1985. Applications pratiques du transfert d'embryons chez les bovins. Elev. Insemin., 206, 3-15.

Semestre : III

EU Title : UEF 2 Subject 1.
Title of the subject : Camel and horse breeding.
Credits : 6
Coefficients : 3
Objectives of the course
Knowledge of the main breeds as well as the breeding of camels and horses.

Recommended prior knowledge
Physiology of digestion and reproduction.

Content of the subject
Chapter I: Main camel and equine breeds in Algeria and in the world.
Chapter II: Feeding of camels and horses.
Chapter III: Physiology of the digestion of camels and horses.
Chapter IV: Physiology of reproduction of camels and horses.
Chapter V: Management of camel and horse breeding.
Internships + field trips + lectures.
Evaluation method: Continuous and EMD.

References

VERONIQUE ARNE ET JEAN-MARC ZALKIND, 2007.L'élevage du cheval, Educagri Editions, 239 p.
ANNICK AUDIOT, 1995. Races d'hier pour l'élevage de demain :Espaces ruraux, Éditions Quae, 230 p.
ADAMOU, A., 2009. L'élevage camelin en Algérie: Système à rotation lente et problème de reproduction, profils hormonaux chez la chamelle Chaambi. Thèse Doct.250 p.
FAYE, B. ET BREY, F., 2004.http://www.wmaker.net/dromas1/lesrelations-entre-chameaux-et-societe_a24.html.

Semester : III
Title of the Unit : UEM 1 Subject 1.
Title of the subject : Livestock Equipment.
Credits : 5
Coefficients : 3

Objectives of the course
To make the student aware of the modern equipment used in the field of breeding.

Recommended prior knowledge
Knowledge acquired in the various internships that the student will carry out.

Content of the subject
Chapter I: Equipment used in cattle breeding.
Chapter II: Equipment used in sheep and goat farming.
Chapter III: Equipment used in poultry farming.
Chapter IV: Equipment used in beekeeping.
Chapter V: Equipment used in rabbit farming.
Internships + field trips.
Evaluation method: Continuous and EMD.

References

Brochures et dépliants du matériel étudié.

Semester : III
Title of the Unit : UEM 2 Subject 1.
Title of the subject : Agro-food technology.
Credits : 4
Coefficients : 2

Teaching objectives
To teach the student the processes used in the transformation of animal products.
Establishment: Djilali Bounaama Khemis Miliana UniversityMaster's Degree: Animal Production

Recommended prior knowledge
Biochemistry, microbiology and nutritional qualities of animal products.

Content of the subject
Acquisition by the student of the functioning of the agri-food company as well as the manufacturing or transformation processes of animal products.
Lectures.
Evaluation method: Continuous and EMD.

References

PHILIPPE AURIERet LUCIE SIRIEIX., 2009. Marketing des produits agroalimentaires. Collection: Marketing sectoriel, Edition Dunod, 368 pages.

Semester : III
Title of the Unit : UED 1 Subject 1.
Title of the subject : Fish farming.
Credits : 2
Coefficients : 2

Teaching objectives
To teach the student the breeding techniques used in the production of farmed fish.

Recommended prior knowledge
Feeding and reproduction of fish.

Content of the subject

Chapter I: Fish farming in Algeria and in the world.
Chapter II: Fish feeding.
Chapter III: Reproduction of fish.
Chapter IV: Shrimp breeding in basin.
Chapter V: Breeding of sea breams in basin.
Chapter VI: Mussel farming at sea.
Training courses + field trips.
Evaluation method: Continuous and EMD.

References

NAYLOR ET AL., 2000. Effect of aquaculture on world fish supplies.
http://www.cahiersagricultures.fr/archives/sommaire.phtml?cle_parution=3148

Semester : III
Title of the Unit : UET 1 Subject 1.
Title of the subject : Entrepreneurship.
Credits : 1
Coefficients : 1

Teaching objectives
To initiate the student to the setting up of a project, its launching, its follow-up and its realization.

Recommended prior knowledge
All the contents of the course

Content of the subject
1. The company and company management
· Definition of a company
· Company organisation
- Supply management: Management of purchases, stocks and organisation of shops.
- Production management: Production methods, production policy.
· Sales and marketing management:
- Product policy,
- Pricing policy,
- Advertising,
- Sales techniques and team
2. Setting up a business creation project
· Definition of a project
· Project specifications
· Methods of financing a project
· The different phases of project implementation
· Project management
· Time management
· Quality management
· Cost management
· Task management
Evaluation method: Continuous and EMD.
References *(Livres et polycopiés, sites internet, etc).*