

28402 - Ethnology and animal well-being

Syllabus Information

Academic Year: 2019/20

Subject: 28402 - Ethnology and animal well-being

Faculty / School: 105 - Facultad de Veterinaria

Degree: 451 - Degree in Veterinary Science

ECTS: 9.0

Year: 1

Semester: Annual

Subject Type: Compulsory

Module: ---

1.General information

1.1.Aims of the course

The student, once passed this subject, should be able to:

Ethnology

1. Identify an animal's breed (within the main breeds or breed groups) and its suitability or usefulness.
2. Make a value judgment on productive or morphostructural information of any important animal breed, in the main domestic species.
3. Understand the lexicon that defines the breeds and its variation of phenotypes, morphology and productivity.
4. Know the most important identification methods and make decisions about their usefulness in specific situations.
5. Present a subject work in an effective way and to be able to carry it out successfully.
6. Know the different basic aspects of the handling of animals.

Animal Welfare

1. To know and explain the animal welfare issues in Europe, integrating it in the context of an agro-ecosystem.
2. Be aware of the ethical commitment of the veterinarian in aspects related to animal welfare and its relationship with the human-animal link.
3. Understand the responsibility of the veterinarian in cases of animal violence in the context of the inter-specific family group and gender violence.
4. To know the definitions and concepts of animal welfare from an EU perspective.
5. To know the physiological bases of the adaptation syndrome (stress) of domestic animals, its biological cost and consequences for physical health and the emotional state.
6. To know the relationships between animal welfare and product quality, integrating animal welfare into a new quality concept within the agro-ecosystems.
7. To know the animal welfare evaluation systems, selecting accurate, valid and reliable animal welfare indicators.
8. To know the current legislation on animal welfare, its general foundations and its practical application in specific case studies.
9. To have a brief knowledge of the most intensive production systems, detecting their critical points for animal welfare and their alternative systems, proposing viable solutions for specific cases.
10. To know, in an introductory way, the normal behavior of the dog and the cat, as well as those behavioral alterations that can be indicators of a loss of welfare status in these species.
11. To know and differentiate normal behavior from altered behavior in dogs and cats.
12. To recognize the critical points that may affect the welfare of pets, analyzing possible viable solutions.

1.2.Context and importance of this course in the degree

Ethnology

It provides students with the practical necessary knowledge to approach the study of other subjects of the Degree in Veterinary, both basic and specialized.

It is a first year subject on the first semester, therefore it is going to receive students that most probably have not had previous contact with the Veterinary Sciences in general and Zootechnics in particular. For this reason, this course will provide students the keys to begin to configure their professional character as veterinarians.

Learning about animal breeds is a good introduction to Animal Production and professional reality and the subject plays an essential role in the training of the future Veterinarian.

Animal Welfare

The Universal Declaration on Animal Welfare (UDAW) (<http://www.udaw.org/about.htm>) has been adopted by the European Union (EU), the World Organisation for Animal Health (OIE), the Federation of Veterinarian of Europe (FVE) and the European Association of Establishment for Veterinary Education (EAEVE), and establishes that this matter is a priority in the training of Veterinarians, as they will be responsible for both defining and enforcing the legislation and standards required in relation to animal welfare. For more information, please visit the following links:

http://ec.europa.eu/food/animal/welfare/index_es.htm

<http://www.oie.int/doc/ged/D4079.PDF>

<http://www.eaeve.org/about-eaeve/mission-and-objectives.html>

http://www.fve.org/about_fve/workinggroups.php

This is a scientific discipline that refers to a physiological state of physical and mental well-being of the animal in a given environment, and can be objectively assessed through physiological, ethological, production and product quality indicators, as well as through the evaluation of housing conditions and handling of animals. The definition of Animal Welfare is based on the so-called Five Freedoms for Animal Welfare first formulated by the Farm Animal Welfare Council (FAWC) (<http://www.fawc.org.uk/freedoms.htm>). We define Animal Welfare as *a dynamic state in which animals adapt effectively in a given environment, overcoming challenges with a minimum biological cost, maintained in a state of complete physical and mental health, in harmony with its environment*. A complete list of definitions of Animal Welfare have been enunciated in our European Project LAYWEL whose website can be consulted at: <http://www.laywel.eu/>

Animal Welfare is, in addition to an ethical aspect of production, an added value of the product that should be valued and certified so that consumers assume a broader concept of quality that includes it in addition to the intrinsic quality of the products. Therefore, the new production systems should include the analysis and optimization of the animal welfare as a main component of the system, with a strong influence on the efficiency of the transformation processes.

The Veterinarians should know and understand the characteristics of the human animal-bond between our clients and their pets, in order to be able to advise properly and to assess the consequences of our recommendations may have on the welfare of the animal and its family.

Although the human-animal relationship is usually good, sometimes people can treat animals in a negligent, violent and even cruel manner. When these situations occur, the ethical and professional principles of the Veterinary Medicine indicate that veterinarians have a responsibility not only to the animals involved, but also to the Society as a whole. The majority of veterinarians recognize their important role in the detection and prevention of animal abuse. Veterinarians should be able to make a clinical diagnosis of animals suspected of mistreatment, cruelty, abuse, emaciation or signs of fighting. However, there is a general coincidence that there are no protocols for appropriate action for these cases that often transcend the animal abuse and sometimes happen to interpersonal and gender-based violence. There are numerous obstacles, in the first place, the little or no training received, as a result of the lack of attention paid to the Forensic Veterinary (www.ivfesa.org); secondly, the scarce legal guarantees that protect the Veterinarian when must report such suspicious cases, especially those in which family violence is suspected; and, thirdly, the absence of clear guidelines and protocols to follow in these cases of animal and/or family violence or abuse.

It is therefore very necessary to include in the Animal Welfare *curriculum* as a competency, and as a subject. Without any kind of attachments, since it is a clear, concise and universally accepted term in all statements about Animal Welfare. We are thus complying with the recommendations of the EU, OIE, FVE and EAEVE, in line with other modern and advanced programmes in Europe.

1.3.Recommendations to take this course

The basic requirements are those corresponding to the initiation of the Veterinary Degree. Basic knowledge of Biology, Anatomy, Mathematics, Biochemistry, Ethics and English are important to facilitate understanding. It also requires the ability to work in groups and solve cases and problems that require the search for information.

Knowledge of computers and Internet use are also highly recommended.

2.Learning goals

2.1.Competences

On successful completion of this course, students will be able to:

Ethnology

1. Identify the breed, its aptitude and the productive implications of the different domestic species.
2. Use in an appropriate way a veterinarian lexicon of habitual use.
3. Understand the complexity of animal identification and its possibilities.
4. Handling animals.

Animal Welfare

1. To interpret and explain the social problem of animal welfare in Europe, integrating it in the context of the agro-ecosystem.

2. To have an ethical perspective in relation to animal welfare issues and its relation to the human-animal bond.
3. To know the responsibility of the veterinarian in cases of animal violence in the context of the inter-specific family and gender violence.
4. To define animal welfare from a EU perspective, based on a holistic concept of animal welfare in relation to the five freedoms.
5. To know the physiological bases of the animal adaptation syndrome (stress), its biological cost and consequences for physical and mental health.
6. To know the relationship between animal welfare to product quality, integrating welfare into a new quality concept within the agro-ecosystem.
7. To know the concept of animal welfare assessment systems, being able to select valid, reliable and viable animal welfare indicators. Understanding current animal welfare legislation, its general rationale and its practical application in specific cases.
8. To know briefly the most intensive production systems, detecting their critical risk points for animal welfare and proposing alternatives within the framework of a more demanding global market, in relation to the resolution of specific cases of risk to animal welfare.
9. To know and differentiate normal behavior from altered behavior in dogs and cats.
10. To recognize the critical points that may compromise animal welfare of pets and to suggest possible viable solutions.
11. To recognize the critical points on which to act to improve the welfare of non-domestic animals in captivity.

2.2.Learning goals

If students complete the course successfully, they should be able to:

Ethnology

- Identify the breed of an animal (within the main breeds or racial groups) and its suitability or utility.
- Make a value judgment on productive or morphostructural information of any kind.
- Make a value judgment on productive or morphostructural information of any important animal breed, in any domestic species.
- Understand the lexicon that defines the breeds and its variation of phenotypes, morphology and productivity.
- Understand the need for animal identification and the usefulness of available methods.
- Know different basic aspects of animal management.

Animal Welfare

1. Assesses and critically evaluates the social problem of animal welfare in the EU in the context of an agro-ecosystem and other animals under human responsibility.
2. Explain and argues about the Veterinarian's ethical commitment to animal welfare issues in the context of European legislation.
3. Understand the human-animal link and the role of the veterinarian in the recognition and prevention of cases of animal and family violence.
4. Define animal welfare and describing the basic concepts related to animal welfare from a modern animal welfare perspective based on the five freedoms.
5. Describe the physiological basis of the adaptation syndrome (stress) of domestic animals, its biological cost and physical and mental health consequences and the emotional state.
6. Relate animal welfare to product quality by integrating welfare into a new concept of quality within of the production system.
7. Describe, in a generic way, the systems of evaluation of the animal welfare, being able to select valid, reliable and viable indicators of animal welfare.
8. Know the fundamentals of current animal welfare legislation and how to apply it in specific case studies.
9. Describe, in a generic way, the most intensive and risky production systems for animal welfare, indicating their critical points and proposing viable production alternatives or partial modifications to the existing ones, aimed at improving animal welfare and efficiency.
10. Assess and differentiate a normal behavior from an altered one in dogs and cats
11. Know the critical points on which to act to improve the welfare of companion animals in the context of the interspecific family group.

Recognize critical points for the welfare of non-domestic animals in captivity

2.3.Importance of learning goals

Ethnology

In addition to the learning and acquisition of competence previously indicated, the student will be able to have a better understanding and make the most of other subjects, both in the area of Clinical Sciences, in which he/she will learn something fundamental about who the patient is, as in the zootechnical subjects of Nutrition and Food, Genetics and especially in ALL the integration of fourth year.

Animal Welfare

The importance of the learning results obtained in the subject are deduced from the points and observations described in the section on context and meaning of the subject in the degree to which I refer for reading

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

Evaluation activities

Ethnology

The student will have to demonstrate that has reached the results of learning foreseen in the evaluation of the different competences:

In order to handle animals, their aptitude and disposition will be valued in the respective practical classes, the professor will value the ability demonstrated by the student to acquire the different management skills taught during the course. practical demonstration.

In order to handle animals, their aptitude and disposition will be valued in the respective practical classes, the professor will value the ability demonstrated by the student to acquire the different management skills taught during the practical demonstration.

In order to recognize the breed, its aptitude and the productive implications of the different domestic species, we will do the following corresponding theoretical (multiple-choice and developmental questions) and practical (breed differentiation by means of the audiovisuals). Each one of these aspects will be valued respectively with 6 and 2 points out of 10. In the theoretical part the student must obtain a grade equivalent to 5, in practice the equivalent to 6, in both parts the serious errors or racial identification will be penalized.

The appropriate use of an everyday veterinarian and farmer lexicon and knowledge of the various identification methods, will be assessed by means of a theoretical examination with multiple-choice questions. Its valuation is included within the 4 points assigned to the theory, already indicated in the previous paragraph.

The 2 remaining points (2 out of 10) are acquired by the assessment of an individual practical work (1 point), and by the results of the continuous assessment (1 point). This continuous assessment includes the assessment of the practices, the results of evaluation exercises carried out in class and voluntary activities previously known by the teacher and which, in no case, will suppose an imbalance in the student's POD.

Animal Welfare

The student must demonstrate that he has achieved the learning outcomes foreseen in the activities and evaluation **detailed in Table 1. The evaluation will be as detailed below:**

Theoretical examination (60%): consisting of a multiple choice test, with 4 options per question (with only one right answer) and applying a random correction coefficient of 25%. The maximum score of this test is 6 points and it is passed with a score equal to or higher than 3 (50%).

Assignment assessment (40%): Six case studies. Student's own study based on real cases of animal welfare on topics presented in class, the student will receive the case, solve it and then attend a class of 1 hour with the responsible teacher of the case study for the final resolution. Total for all cases 1 point (0.166 each).

Field homework about a current Animal Welfare issue based in the City of Zaragoza. Animal welfare surveys in groups of 3-4 people. To carry out the surveys, elaborate the data with a computer application and to elaborate a corresponding report. A poster will be prepared with all the course data and will be publicly exhibited in the Faculty. Work done throughout the course in groups of 3-4 students (1.5 points).

Total grade for homeworks: 4 points. They will only be added to the final mark for animal welfare when 50% of the mark is obtained from the theory exam.

On-farm animal welfare (laying hens) assessment practices: On-site assessment at the end of the practice and compulsory attendance.

Dog training practice: On-site evaluation at the end of the practice and compulsory attendance.

Classroom Practice: recording and analysis of animal behavior based on video recording from our experiments with domestic animals (assistance and practice notebook).

Seminar by invitation on a current topic in Animal Welfare (proposed by the students): attendance and debate.

Final mark for animal welfare = theoretical examination (60%) + papers (40%).

Example: a student who obtains a 4 in the theoretical examination (out of 6) and a 2 for works (out of 4), will have a final grade (in animal welfare part) of 6 (out of 10).

Valuation criteria and requirement levels

Finally, in order to pass the theoretical exam, it is required to obtain 50% of the possible points, 60% in the practical one, as previously specified.

The final grade of this subject is obtained by averaging the grade obtained in Ethnology and Animal Welfare. This final grade will be obtained once the two parts of the subject have been passed.

The subject is passed with a grade equal to or higher than 5 out of 10. The qualitative grade will respond to the following criteria established in the exam regulations of the University of Zaragoza.

Note: If a student passes only one of the parts (Ethnology or Animal Welfare), the grade will be kept in the Unit's database until the student passes the other part of the course.

Marking system:

According to the national regulation Law 1025/2003, 5th of September which lays down the European system of credits and marking system for the university degree.

0-4,9: FAIL.

5,0-6,9: PASS

7,0-8,9: GOOD (NT).

9,0-10: EXCELLENT (SB).

As the article 158 of the Statutes of the University of Zaragoza lays down, provisional grades will be displayed at least for 7 days and students will be able to review them on the date, time and place provided for that purpose.

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

Presentation of the global methodology

Ethnology

The learning process of this subject is based in all the next activities:

Theory. The program indicated for the subject will be developed in this activity, see point 5.3. This program will be previously known by the students with respect to the annual program and with respect to a guide book. All this will be complemented with other resources as CDs, typed sheets and triptychs.

Practice. Breed diagnosis, these lessons will be related with breed differentiation in the most important domestic species. Many of them will be prepared by the own students, always helped by the teachers of the subject.

Practice in classroom. About reproductive and productive problems.

Practice. Personal work about any theme related with the Ethnology: any breed, variety, breed group, and also about morphological aspects, social opinions and/or utility.

Practice. Management of 3 different species. In this on-farm lectures, the main morphological aspects and identification systems for each species will also be showed.

Animal fair.

Personal and continuous evaluation. This evaluation will be related with all the points related across the academic period. For example, of that, small tests will be performed, they will be run in the own classroom, with evaluation at the moment and with a positive note for all the students with excellent results.

Animal Welfare

The learning group in this part of the course will use the following teaching resources:

- Lectures in the classroom (manual of the classes will be provided and ppt presentation)
- Practices in the video room with digital video of our animal welfare experiments.
- Practices with animals in the experimental farm (welfare assessment in commercial laying hens)
- Two field studies in groups of 3-4 students. Data collection, data analysis, field report presentation.
- Case studies (homework) and resolution in classroom with the instructor (mainly focused in animal welfare legislation application to real cases).
- Tutorials in lab/office (mainly related to the design and realization of the field works)
- Seminar and debate with invited speaker (expert of some animal welfare hot topics).
- Course frame in the Digital Platform of the University *Moddle2* (all material and student's communication will be conducted in this digital platform).
- Theory evaluation (multiple choice-test) at the end of the course (weight 60%).
- Evaluation of home works, case studies and field work reports (weight 40%).
- Tutorials by e-mail with the instructor.
- Availability at the beginning of the Course Manual *?Animal Welfare??* (114 pp.), prepared by the responsible teacher, including all the material explained in the course in class, actualized every year with the most recent material related to animal welfare topics in EU. The manual contain all the recommended literature used in the elaboration of the manual. This manual will be mainly useful for those students with difficulties to attend the theory classes, complemented with tutorial by e-mail or in the lab/office.
- Availability at the beginning of the course of the PDF version of the Power Point presentations of the Instructors (in the digital platform).
- Availability of all case studies to be solved by the student in hard copy and pdf, before the case resolution in class with the instructors.

At the end of the course and after exams, students will be able to evaluate the course and the instructors. This evaluation will be realized using the digital platform of the University (ATENEA).

4.2.Learning tasks

Ethnology

The program offered to help the student to get the results includes the next programmed activities:

- Theory in classroom.
- Practical lesson in classroom.
- Practical lessons on-farm.
- Personal work.

Animal Welfare

All classes and activities will be programmed at the beginning of the course (Animal Welfare Course will start in early February -spring term-). Please, see groups and calendars in the web site of the Faculty of Veterinary Medicine, and check periodically for possible small changes during the course. <http://wzar.unizar.es/servicios/calendario>

4.3.Syllabus

Ethnology

Activities	Theory Hours	P
Introduction		
Introduction to the subject and main definitions	1	
Systematic of the breed classifications. Baron	1	
Physiology-related productive indexes (reproductive, farm and productive)	4	
Productive and reproductive problems		1
Work related to Ethnology. Half an hour about methodology aspects and half an hour of individual attention		1
Identification in livestock species (natural, technified and artificial).	2	
Identification in livestock species		
MANAGEMENT AND REGIONAL PECULIARITIES		
Small animals		1
Equine		1
Poultry		1
VISIT TO LIVESTOCK FAIR		
Multi-sectorial, where possible combined with livestock farming and animal park		1
BREED DIFFERENTIATION		
Equine species. (Introduction, large breeds, other breeds, hybrid donkeys).	2	
Bovine species. (Introduction to the species, world breeds by aptitudes, Spanish breeds).	4	
Key racial differentiation in bovines.		1
Sheep species. (Introduction, world breeds by racial types, Spanish breeds).	4	
Key racial differentiation in sheep		1
Goat species. (Introduction to the species, world breeds by aptitudes, Spanish breeds).	2	
Key racial differentiation in goat		1

Porcine species. (Introduction, hybridization, world breeds, Spanish breeds).	2	
Key racial differentiation in pigs		1
Rabbits. (Introduction, racial classification).	1	
Key racial differentiation in rabbits.		1
Poultry: (Introduction, racial classification within the main species).	1	
Key racial differentiation in poultry		1
Cage birds. (Introduction and classification of the main species).	1	
Canine species. (Introduction: Basic Aspects).	2	
Key differentiation of racial groups in dogs.		2
Feline species (Introduction and main breeds)	1	
Key racial differentiation cats.		1
TOTAL	28	17

Animal Welfare

	TOPIC
I	Animal Welfare: Concepts and assessment
I.1	Animal welfare in the context of the agro-ecosystem
I.2	Ethics and Animal Welfare. Lines of thought.
I.3	The human-animal bond. Importance of anamnesis and Veterinary advice.
I.4	Animal violence and mistreatment. Role of the Veterinarian.
I.5	Animal Welfare and the Food Market
I.6	Ethology and Animal Welfare
I.7	The consequence of stabling in animals
I.8	Relationship between production and animal welfare
I.9	Genetic selection for productivity and animal welfare
II	Animal Welfare: adaptive response and definition
II.1	Biological cost of adaptation
II.2	Definitions of Animal Welfare
III	Animal Welfare Assessment
III.1	Multi-criteria approach
III.2	Levels of action
III.3	Animal welfare indicator groups: Stress sensitivity thresholds
III.4	The EU assessment of animal welfare: The Welfare Quality® System
III.5	Animal Welfare as a production aim

III.6	Categorization of Production Systems
IV	Aspects common to all systems
IV.1	Transport and Animal Welfare
IV.2	Transport as moving housing
IV.3	The regulation of animal transport in the EU
IV.4	Critical points in the transport of animals. Temperature and air quality.
IV.5	The natural livestock handling by Temple Grandin
IV.6	Strategies for natural livestock Handling
IV.7	The role of senses during livestock handling
IV.8	Factors Affecting Transport Stress
V	Concepts of fear reaction (fearfulness)
V.1	Definition of fear and terminology
V.2	Fear Measurement
V.3	Determining factors of fear
VI	Concept of pain
VI.1	Definition of the pain
VI.2	Measuring Painful Behavior
VII	Concepts of suffering
VII.1	Definition of suffering
VII.2	Sensory and cognitive abilities. Implications
VII.3	Recognition and Valuation of Suffering
VIII	Stress response and meat quality
VIII.1	Consequences of pre-sacrifice handling
VIII.2	Effect of stress on meat quality
VIII.3	Post-mortem metabolic changes
VIII.4	Stress Defects of Meat
IX	Slaughter procedure
IX.1	The slaughter process
IX.2	Ante-mortem inspection
IX.3	Stunning and slaughter
IX.4	Stunning and Slaughter Control Systems by EU Regulation
IX.5	The new figure of the animal welfare officer at slaughterhouses.
X	Description of some intensive production systems: critical points for animal welfare(AW)*.

X.1	The egg production system: battery laying hens and alternatives to cages (floor systems)
X.2	The intensive broiler chicken meat production system
X.3	The intensive pig meat production system
X.4	The intensive dairy cattle production system
X.5	The intensive beef production system (feed-lot)
X.6	The intensive system of sheep meat production (lamb feed lot in Aragon Region)
XI	Livestock and greenhouse gas emissions (GGELS). Relationship with AW
XII	Applied canine and feline ethology
	Aspects of animal welfare in pets
	Animal welfare aspects of captive non-domestic animals (Zoo and similar)
	* The systems are briefly described with special emphasis on the most critical aspects for AW. For reasons of time we prioritize the most intensive systems, especially those that have been the subject of specific legislation. Depending on availability, we will also try to deal with systems such as aquaculture or rabbit production, which in the near future will be the subject of specific BA legislation.

4.4.Course planning and calendar

Ethnology

The time table of the Ethnology will be adapted to the academic calendar. Each student will receive a total of 28 hours of theory and 17 hours of practical lessons. These last include: 4 hours of animal management, 2 hour of identification methods, 9 hours of breed differentiation (see program), 1 hour of solving productive and reproductive problems and 1 hour for preparing the index and methodology of the personal work.

This personal work will be presented just before Christmas time and will be evaluated during January. In any case some voluntary sessions of personal auto-evaluation will be performed.

For a more detailed calendar see: <http://wzar.unizar.es/servicios/calendario>

Animal Welfare

Summary table for the results and methodology used in the animal welfare part (spring term)

The academic calendar offer a total of 27 lecture hours (theory) and 18 other type of lecture hours (practices in lab/hospital, practices in farm, field studies, case studies and seminars).

Results	Methodology	Credits	Evaluation
1. To understand and explain the animal welfare issues in the EU, in the context of the agro-ecosystem and all animals under the care of humans.	Lectures and manual Documents on digital platform Field surveys Reports and posters	0.25	Exam Field work Case studies
2. To know and explain the ethical compromise of the Vet Professionals in relation to the animal welfare issues in EU. To know and understand the importance of the human animal bond and to detect cases of animal violence and abuse.	Lectures and manual Survey, reports Document available on digital platform	0.25	Exam Case studies
3. To know the animal welfare definition according to the new EU concept based on the five freedoms.	Lectures and manual Documents available in digital platform	0.75	Exam
4. To know the physiological base of the stress response in domestic and other captive animals.	Lectures and manual Documents available in digital platform	0.40	Exam
5. To understand the relationship between animal welfare and product quality (including the ethical value of the product).	Lectures and manual Case studies Documents available in digital	0.20	Exam Case studies Home work

	platform		
6. To know the animal welfare assessment methods and the animal welfare indicators in function of its validity, feasibility and viability.	Lectures Practices in farm Case studies Documents available in digital platform	0.20	Exam Practice farm Cases studies Home work
7. To know the animal welfare legislation and to use this legislation in case studies	Case studies Documents available in digital platform	0.50	Cases studies Home work
8. To know the main intensive animal production systems (overview), with a critical perspective in relation to the animal welfare risks, proposing possible solutions in the context of the new food markets.	Lectures Case studies Documents available in digital platform	1.00	Exam Case studies Home-work Practice at the farm
9. To evaluate and distinguish the normal and abnormal behaviours in dog and cats.	Lectures Practices in lab	0.50	Exam Practice in hospital
10. To recognize the critical points for animal welfare in companion animals.	Lectures	0.25	Exam
11. To recognize the critical points for animal welfare in no-domestic captive animals (Zoo-type)	Lectures Seminar	0.20	Exam
Animal Welfare		4.5	Exam 60% Others 40%

4.5. Bibliography and recommended resources

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=28402>