

Academic Year/course: 2021/22

## 66851 - One Welfare: Environment, sustainability and animal-human bond

### Syllabus Information

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**Academic Year:** 2021/22

**Subject:** 66851 - One Welfare: Environment, sustainability and animal-human bond

**Faculty / School:** 105 - Facultad de Veterinaria

**Degree:** 617 - Master's in Global Health: Integration of Environmental, Human and Animal Health

**ECTS:** 6.0

**Year:** 1

**Semester:** First semester

**Subject Type:** Compulsory

**Module:**

## 1. General information

### 1.1. Aims of the course

**The subject and its expected results respond to the following approaches and objectives:**

This course is part of the compulsory subject set. It contributes to the training in basic competences related to critical reasoning, self-learning and written and oral expression. Furthermore, with a multidisciplinary approach and paying attention to global changes, the improvement of this discipline will enable students to analyse and improve complex processes, not only considering aspects of animal and human health, but also the health of ecosystems, the sustainability of agro-livestock systems, animal and human welfare, the relationship with wildlife and ecosystem services. These capacities will help future graduates in the performance of technical or research activities in companies and institutions, such as international organizations or public agencies in the field of One Health.

### 1.2. Context and importance of this course in the degree

This course allows to broaden the concept of global health by relating human and animal health to the health of ecosystems. In addition, the course emphasizes the importance of aspects such as animal and human welfare in global health. It will also form in the importance of the management, conservation and use of the wild fauna and its implications in the human and animal health. Finally, the role of agro-livestock systems in maintaining a balance between human, animal and environmental health will be analysed. Due to its mandatory nature, the learning results achieved in this course are intended to contribute, in addition, to a better use of the practice "One Health in the territory; human-animal-media interaction" of the One Health course and of the optional subjects of both the Specialization in Public Health and the Translational Research Module.

### 1.3. Recommendations to take this course

It is recommended, but not necessary, that the student has basic knowledge of the general subjects to be dealt with in the subject, such as, Biology, Social Sciences, Ecology, Economics, Animal Production and Plant Production. It is favourable that the student has the capacity of observation, analysis, knowledge integration and synthesis.

## 2. Learning goals

### 2.1. Competences

#### 2.1.1. General competences

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

- Ability to transmit to society a sensitivity towards environmental issues and sustainable development.
- Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context.
- Integrate knowledge and deal with the complexity of making judgements based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgements.
- Possess the learning skills that will enable them to continue studying in a largely self-directed or autonomous

manner.

### **2.1.2. Transverse competences**

- Identify, analyse and solve problems with scientific criteria and make decisions with initiative, creativity and critical reasoning.
- Acquire the knowledge and skills necessary for the development of work and research in an autonomous way.

### **2.1.3. Specific competences**

- Identify, classify and evaluate the essential environmental and anthropic determinants of Global Health.
- Understand the relevance of sustainable development in global health care.
- Identify and understand the effect of global change on health.
- Understand the importance of animal welfare and the human-animal link in Global Health.

## **2.2. Learning goals**

The learning outcomes students should acquire by the end of this course are the following:

- Understand how the One Welfare approach complements the One Health one and identify examples that encompass the concept.
- Know the potentialities of the agro-food sector in sustainable development.
- Ability to explain the basic principles of environmental and health economics linked to the concept of externalities.
- Understand the interrelationships that may exist between the circular economy and the bio-economy.
- Know the concept of sustainability applied to socio-agro-ecosystems and know how to apply the different methodologies.
- Analyse the problems associated with the current food system and its alternatives.
- Understand the functions and elements of the ecosystems that provide services to society.
- Ability to assess the health of ecosystems: diagnosis, conservation and restoration.
- Recognize the therapeutic value of nature.
- Know the basis of wildlife management in relation to health.
- Reflect on changes in land, water, energy and material use on a global scale and their impact on health in the context of the Anthropocene.
- Analyse the main factors of global change, their origin, future scenarios and their relation to global health, as well as adaptation and mitigation alternatives.
- Assess the contributions of agro-ecological management of agro-ecosystems to global health
- Analyse resilience, agrobiodiversity and other properties of agroecosystems: how to cope with disturbances
- Understand the basis of Ecotoxicology and its relationship with the concept of One Health.
- Know the possible sources and destinations of toxic substances in the environment.
- Know the consequences of exposure to environmental pollutants on health.
- Assess the importance of the diet of animal origin in human evolution and health.
- Know the determinants of the human/animal relationship.
- Analyse the advantages and disadvantages of extensive and intensive livestock production systems
- Assess the need for the conservation of animal populations in their own natural environment.
- Know the actions carried out in animal production to preserve animal and human health.
- Understand the concept of animal welfare, how it is valued, and to recognise its implications in current animal production.
- Reflect on consumption trends and the future of animal production.

## **2.3. Importance of learning goals**

The course contributes to the training of professionals in the field of global health, from a holistic point of view and with a broad vision of the aspects that include human, animal and ecosystem health, considering the environmental, economic and social perspective. This training responds to the needs of society in the 21st century and will enable the development of professionals capable of designing, developing and leading projects in the field of global health, as well as working in multidisciplinary teams.

## **3. Assessment (1st and 2nd call)**

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

The student must demonstrate that achieved the intended learning outcomes through the following assessment activities:

### Written exam

The knowledge and understanding of the theoretical and practical contents will be assessed with a written exam on the official dates, at the end of each school term. The examination shall consist of brief descriptive questions, to be answered in a concise manner and multiple choice questions. For every four multiple choice questions answered incorrectly, one point will be deducted.

In order to pass the exam, at least 50% of the possible points must be obtained for the theoretical and practical contents as a whole. The qualification will be 65% of the final grade of the course.

### Problem solving and critical analysis of problems and case studies

The capacity to solve problems and cases will be assessed, through the management of information and the use of methodologies proposed by the teachers. The qualification will be the 35% of the final grade of the subject, including the active participation of the student (15% of the activity grade).

The assessment of each activity is showed by the table down below:

Assessment system	%
Written exam	65
Problem solving and critical analysis of problems and case studies	35

### Assessment criteria

**Written tests.** The following aspects will be assessed:

- Suitability of the answers to the content exposed in the theoretical sessions.
- Clarity in the written statement.
- Ability to interrelate different concepts.

**Problem solving and practical case studies.** The following aspects will be assessed:

- Presentation of the assignments in time and form.
- Correct use of the methodologies taught.
- Ability to work individually and in groups.
- Capacity for multidisciplinary analysis.
- Attendance and participation of class discussion

### Global assessment:

Students who have not attended a minimum of 80% of the practices, have not submitted the works requested or have not passed the subject must prove that they have acquired the corresponding skills through a global assessment, which includes theoretical and practical contents and the resolution of a practical case, similar to those presented in class but in situ. This test will have a score between 0 and 10 points. Assessment criteria: the written test will suppose 65% of the final grade and the resolution of the case 35%.

**Grading 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

Students with a grade over 9.0 might be awarded with honours.

## 4. Methodology, learning tasks, syllabus and resources

### 4.1. Methodological overview

The "One Welfare" concept recognizes the relationship between animal and human welfare, biodiversity and the environment. For this reason, in this subject we have professors from the University of Zaragoza from different areas of knowledge (Economics, Sociology and Agricultural Policy, Plant Production, Ecology, Animal Production, Genetics, Nursing,

Toxicology, Animal Pathology), as well as external guests, with professional and research experience in the field, to give the required multidisciplinary approach.

The learning process that has been designed for this subject is based on a combination of the following methods:

- Theoretical lectures by teachers, with the help of audiovisual media, supported by the publication of summaries and complementary material in the ADD to encourage prior study and participation in class by students.
- Presentation of case studies, so that the student can visualize concrete examples, as far as possible in situ, of what the human relationship with animals, the environment and health implies, in a historical and current context, and which allows for the projection of the future.
- Problem solving and case studies, so that students "learn by doing" and acquire practical skills to achieve professional competences.

## 4.2. Learning tasks

The learning activities include theoretical lectures given by professors from the University of Zaragoza, talks by experts from outside the University of Zaragoza and case study presentations, both in the classroom and in visits to places of interest for the subject. The students will also have to solve and critically analyze problems and practical cases (in the classroom and computer room), guided by the professors. Finally, the student's autonomous work is required, for the understanding and integration of the theoretical and practical knowledge acquired. The distribution of hours of these activities is described in the following table:

Learning tasks	Hours	% Face-to-face
Lectures	42	100
Case study presentations	5	100
Practical activities, problem solving and cases	13	100
Student's autonomous work	90	0
	<b>150</b>	<b>0-100</b>

The activities that will be carried out during the multidisciplinary practice "One Health in the Territory", in which teachers from "One Welfare: Environment, sustainability and animal-human relationship" will participate, are detailed in the teaching guideline of "One Health, origin, evolution and future". It is worth mentioning that this multidisciplinary practice implies that the student carries out autonomous work, either in the study of the theoretical and practical concepts or in the bibliographic consultation and tutorials related to "One Welfare: Environment, sustainability and animal-human relationship".

On the other hand, the subject Ecology and Ecotoxicology, as elective subject, increases and complements the knowledge of the present subject on those topics.

## 4.3. Syllabus

The syllabus offered to the student to help him/her achieve the expected results includes the following theoretical and practical content.

### Theory content:

It includes an introduction and reflection to the general concept of One Welfare and two blocks on: 1) Animal and human welfare, 2) Environmental welfare:

- One welfare: a framework for improving animal and human welfare. Animal and human welfare.
- Human-animal relationship: Animal and human welfare. Assessment and indicators of animal welfare. Human health and its relationship with the consumption of products of animal origin. Biosecurity in the farm and health. Indicators of resilience and sustainability. The therapeutic value of nature.
- Environmental welfare: Global change and ecosystem services. Ecosystem health. Livestock and ecosystem services. Diversity and efficiency of productive systems. Climate change: origin and consequences. Adaptation and mitigation measures. Sustainable development. Bioeconomics and circular economy. The ecological footprint of the agri-food system. Management of manure. Wildlife and agro-ecosystems. Conservation and management of wildlife. Health monitoring of wildlife. Animal genetic resources and the importance of their conservation. Fundamentals of Ecotoxicology. Agro-ecology and integrated pest management. Local food systems and organic products.

### Practice content:

- Sustainability analysis
- Ecosystem services
- Carbon balance

- Hydrological print of food products
- Animal genetic resources
- Green care examples
- Therapy with animals
- Critical reflection on the future of One Welfare

#### 4.4. Course planning and calendar

The calendar of the master and the programming of the theoretical and practical sessions of the course will appear throughout the month of September on the website of the Faculty of Veterinary Medicine, at the following address: <http://veterinaria.unizar.es/>, which will be updated at the beginning of each academic year.

**Coordinators:**

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**Tutorials:**

Each teacher will indicate how to carry out his or her tutorials with students.

#### 4.5. Bibliography and recommended resources

The list of updated bibliography, presentations and recommended resources will be displayed in the ADD and, as far as possible, will be available before the theoretical and practical sessions, so that students can consult them beforehand to encourage understanding and more active participation.