

Academic Year/course: 2021/22

## 28443 - Zoonosis, Preventive Medicine and Health Policy

### Syllabus Information

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**Academic Year:** 2021/22

**Subject:** 28443 - Zoonosis, Preventive Medicine and Health Policy

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

**Degree:** 451 - Degree in Veterinary Science

**ECTS:** 8.0

**Year:** 5

**Semester:** First semester

**Subject Type:** Compulsory

**Module:**

## 1. General information

### 1.1. Aims of the course

- Students should visualize, in the context of the biodiversity of existing ecosystems, the wide range of biotic factors that condition the appearance and evolution of epidemic processes that are contagious or transmissible for both animals and the human species.
- Students should be aware of the economic, social and cultural conditions that influence the appearance of the disease and that condition the possibilities of their control and eradication.
- Students should acquire the necessary ability in the handling of sanitary tools, theoretical or methodological, to identify situations of sanitary risk and to react before them by means of strategies of prevention.
- Students should develop the capacity to make decisions, fundamentally of a sanitary nature, in the face of the emergence of animal diseases, with implications for animal health or public health, within the range of existing possibilities for intervention.

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

The World Organisation for Animal Health (OIE) makes very clear the role of veterinarians: they are responsible for ensuring the health and welfare of animals, related populations and the ecosystem? Within this responsibility, the implications of animal health on human health makes the veterinary profession a component of the strategy of GLOBAL HEALTH (One World One Health).

The contagious and communicable diseases have a potential of very fast propagation what makes necessary that we must be prepared to anticipate, by means of the PREVENTION, to that risk of propagation, and to react, CONTROL and ERRADICATION, before the evidence of its appearance, since this diffusion can be fatal as much for the animal production of which the supply to the human populations is sustained, as for the public health by the fact that some of these diseases are transmissible to the man himself.

On many occasions, the appearance of some of the diseases that affect animals, and therefore the implementation of control measures, has implications at national or international level and therefore it is necessary to consider legal aspects in these actions. Therefore, the availability of knowledge regarding these legal aspects and how to manage them from a veterinary perspective is another key element that will condition the results of the proposed control measures.

To this situation must be added another aspect that complicates veterinary intervention: the insertion of people into the environment where they interact with domestic and wild animals constitutes an element of sustenance, development, service and affection, but also exposes the human species to contracting pathologies common to both.

These diseases shared by humans and animals are called zoonoses and have been defined by a Joint WHO/FAO Expert Committee as "those diseases that are naturally transmitted from vertebrate animals to humans and vice versa". More than 200 zoonoses have been described so far.

Zoonoses have, in addition to an economic aspect, an evident impact on human health whose valuation in socio-economic terms is difficult to quantify. This means that the veterinarian, as a health professional, has a special responsibility in the surveillance of all animal diseases that can be transmitted to humans. Therefore, knowing these pathogenic agents their presentation and evolution, in the context of the interaction between animals, humans and the environment, is essential to avoid their EMERGENCY. The knowledge acquired will make it possible to decide on the most appropriate control measures both individually and in the animal community and in the other RISK ELEMENTS that characterise this interaction.

The role of the veterinarian in the face of the appearance of diseases implies the implementation of health actions which, when applied inappropriately, become an obstacle to guaranteeing animal health and public health. This requires veterinarians to be trained to discern the usefulness and disadvantages of each of the health tools available to decide on

their use in each case.

Furthermore, when zoonoses are considered, it can be seen that expert reports, endorsed by international bodies such as the WHO or the OIE, advise that for a better and quicker solution to public health problems, it is essential to have highly coordinated health structures and health professionals specialised in the field, who deal with crises in an integrated manner, that is to say, with the participation of all the health professions competent in each of the fields of action (doctors, veterinarians, biologists, nurses, etc.).

For this reason, it is necessary to assume that, in a global world, health has a global perspective in which the veterinary profession must interact with many other professions involved in this global context in order for an effective response to emerge from this interdisciplinarity, where the importance of the One World One Health concept comes into play.

### **1.3. Recommendations to take this course**

In order to take this subject, it is recommended that the student has taken all the subjects of the previous courses and especially the subjects corresponding to the integrations of animal species on which the work will be based in the blocks of Preventive Medicine and Zoonosis.

## **2. Learning goals**

### **2.1. Competences**

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

- Understand the importance of their intervention in the face of animal population diseases, the possibility of their spread among communities and the risk they pose to public health.
- Respond, through health decisions, to the possible appearance of an outbreak of disease and to understand its implications for human populations.
- Apply the different legal aspects of national and international policy in the face of special actions affecting animals and people related to them and whose objective is the prevention, control or eradication of diseases.

### **2.2. Learning goals**

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

- Know the factors that define the emergence and evolution of contagious and communicable diseases in domestic and wild animals and their role in the transmission process between them and the human species.
- Understand the importance of interaction between animals, humans and the environment in the emergence of animal diseases with an impact on animal and public health.
- Know the mechanisms for assessing the risk and impact of disease in a population and its economic, health and ecological implications, both from a spatial and temporal perspective.
- Use the tools that Preventive Medicine provides to act against the risk of the appearance of the disease, or to minimize its impact if it already exists.
- Know the advantages and disadvantages of the use of these tools in animal populations and have the ability to discern when to use them in each pathological context presented.
- Understand and know the legal aspects that condition veterinary intervention when faced with the risk or appearance of diseases from both an animal health and a public health perspective.
- Be familiar with the structure and functioning of veterinary services in Spain and in the context of the European Union, as well as with the functioning of international health organisations.
- Understand the role of the veterinarian and his intervention in the context of global health as a basis for the protection of world populations.

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

The knowledge obtained constitutes the basis of the training of the health worker responsible for the action in the event of the appearance of a disease with implications both for the productive system and for the people who live with the animals or are supplied with them.

In the same way, some of the knowledge acquired will be basic to understand to what extent the veterinarian will be involved in making health decisions from a purely clinical, environmental, legal or public health perspective.

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

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

Carrying out and presenting the different individual and group activities that are indicated later. The assessment by the

teaching staff of all these activities, which are identified as the student's portfolio, will lead to the final grade for each student. It is therefore a CONTINUOUS evaluation without taking a theoretical exam. Assessment criteria and levels of demand

Assessment criteria and levels of demand The learning evaluation process will be based on carrying out different WORKS from the ACTIVITIES developed in the PRACTICAL sessions (some of a group type, others individual) proposed throughout the course. The activities and their assessment will be as follows:

- GROUP WORKS

Z3.- TECHNICAL REPORT (2 Points)

MP2.- POSTER (1 point)

MP3.-VACCINATION PRESENTATION (2 points)

Z2a.- DISCUSSION OF THE SIMULATION CASE (1 point)

Z2b.- PRESENTATION OF EPIDEMIC RISK (1 point)

- INDIVIDUAL WORKS

Z1.- WORK ZOONOSIS DISEASE (1 point)

MP1.- DISCUSSION OF THE ERADICATION CASE (1 point)

MP5.- WORK DISEASE EDO (1 point)

- VOLUNTARY ACTIVITIES XALOC OH CLUB- activities in SCHOOLS Voluntary participation in this activity will constitute AN EXTRA POINT to be added to the final result of the previous two

The different individual activities will be delivered in written documents (pdf format), while the group works will include written documents (technical report), design of posters and comics for public exhibition, or oral presentations developed in the practice room (vaccination report) and simulation case.

In order to pass the subject it will be necessary:

a- To carry out all the compulsory activities that are part of the evaluation (points 1 and 2) and to pass every one (each one separately).

b- To pass an activity means a completed work to have submitted it and to get at least 25% of the possible score.

c- The absence of an activity or the evaluation of one of them with a value less than 25% of the possible is equivalent to a SUSPENSE of the activity and therefore of the subject.

Those students who do not opt for continuous assessment or who have not passed it, will be entitled to a global test that will consist of a written exam of 20 questions based on the theoretical content and practical cases presented in the classroom throughout the course. Each question on the test will be scored quantitatively with a value between 0 and 1. To pass the course, a minimum of 60% of the maximum possible score must be obtained (20 points).

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

### 4.1. Methodological overview

The fact that it is an applicative subject (it uses the concepts and knowledge of other subjects), makes that the whole part of the time we are working with case studies. This tool also allows the development of transversal skills such as leadership, decision making, ability to take decisions or the development of critical thinking.

### 4.2. Learning tasks

The program offered to the student to help him achieve the expected results includes the following activities ...

All the contents explained will be supported by theoretical material provided through the ADD of the University of Zaragoza and consisting of theoretical documents prepared in-house, complementary documents provided by external collaborators (pharmaceutical laboratories, field specialists ...) and different examples of studies. of cases prepared by the teaching staff, cases that are extracted from reality and adapted for the training process that is developed specifically in this subject.

Structure and organization of teaching:

A- Theoretical sessions:

They will be done in the classroom in person to develop theoretical concepts using real cases to introduce those concepts. It is organized into two blocks, an initial one of Preventive Medicine, where strategies for action against diseases will be developed from the perspective of Animal Health and Public Health and a second block of Zoonoses where the main zoonotic diseases with an interest in Health will be addressed. Public (see program).

At three different moments of the theoretical sessions (after explaining the necessary contents) each student will be individually commissioned to carry out 4 different works of the CASE RESOLUTION type, which must be handed in to the corresponding teacher for evaluation. Each work will have a maximum grade of 1 point.

B- Practical sessions:

It will consist of EIGHT practical sessions, FIVE dedicated to working on the Preventive Medicine block and THREE (one of them divided into two) working sessions on Zoonosis (see program in the table below). All sessions (except MP1) have associated works, group or individual, which must be carried out and delivered or presented and which constitute part of the evaluation of the subject.

Type of practical sessions:

Tipos de Sesiones prácticas

Clave	Activity	WORK	Value
Z1	Q fever case ( 3 h)/6 groups	Individual	1
Z2a	Epidemic simulation(2 h)/12 groups	Group	1
Z2b	Risk of epidemics (2 h)/12 groups	Group	1
Z3	Movement risk analysis (3 h)/6 groups	Group	2
MP1	Farm case (3 h)/12 groups	NO	0
MP2	Biosecurity (2 h)/12 groups	Group	1
MP3	Vaccination (3 h)/12 groups	Group	2
MP4	Region strategy (3 h)/6 groups	Individual	1
MP5	<b>Disease CD</b> (3 h)/6 groups	Individual	1

### 4.3. Syllabus

All contents presented and developed activities are supported on material provided through the ADD of the University of Zaragoza. The materials included theoretical documents, multimedia presentations or documents provided by external partners (pharmaceutical laboratories, field specialists ...) and various examples of different case studies. These case studies present real situations that have been adapted to the training process developed specifically for this subject.

The subject is divided in two thematic parts:

**Part 1 ZOONOSIS**, divided into 3 clusters:

- A- Zoonose; general considerations
- B- The main zoonose models
- C- Zoonose response and Veterinary Public Health.

**Part 2 PREVENTIVE MEDICINE AND HEALTH POLITICS**, divided into four thematic clusters:

- A- Concepts to understand the disease from a Preventive Medicine point of view
- B- Main tools for decision making in Preventive Medicine
- C-Response strategies in Preventive Medicine
- D-Health Politics and health regulations

### 4.4. Course planning and calendar

The distribution of the program and de timetable of every lesson and practices are described in detail in the web site of the Faculty of Veterinary Medicine (link <http://veterinaria.unizar.es/gradoveterinaria/>) and in the calendar of the ADD. This links will be updated at the beginning of each academic year.

### 4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=28443>