

Academic Year/course: 2021/22

66862 - Comparative medicine: diseases in humans and animals

Syllabus Information

Academic Year: 2021/22

Subject: 66862 - Comparative medicine: diseases in humans and animals

Faculty / School: 105 - Facultad de Veterinaria

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

ECTS: 3.0

Year: 1

Semester: Second semester

Subject Type: Optional

Module:

1. General information

1.1. Aims of the course

The main goal of the course is to become aware of the existence of numerous animal and human diseases that share similar pathogenic mechanisms and of the importance that animal models have had and will have in the study of human diseases. In the theoretical classes certain human diseases will be explained by medical specialists and those that can serve as models in animals, by veterinary specialists. In the practical part, individual work will be done to study in depth more specific aspects of some of these diseases or of others that have not been included in the theoretical classes.

1.2. Context and importance of this course in the degree

This course is included in the University Master in Global Health: Integration of Environmental, Human and Animal Health. This master contemplates an interdisciplinary approach to the study of health, which seeks to integrate epidemiological, environmental and molecular tools to understand the dynamics of diseases. The subject of Comparative Medicine is optional and provides information on the similarity of some animal and human diseases and the importance of their comparative study in a global concept of health.

1.3. Recommendations to take this course

It is desirable that the student has minimal prior knowledge of anatomy, biology, cytology, histology, physiology, biochemistry and pathology. In very specific cases where it is considered necessary, additional information may be provided prior to the theoretical classes or afterwards.

2. Learning goals

2.1. Competences

By taking this course the student will achieve the following specific skills:

- Understanding the importance of animal models for the study of human diseases.
- Learn about canine diseases that can serve as a model for human diseases.
- Knowing feline diseases that can serve as a model for human disease.
- Knowing certain diseases of production animals that are useful as models of human diseases.

2.2. Learning goals

In order to pass this course, the student must demonstrate the following results:

- Understand metabolic diseases in the dog and cat as a model of human metabolic diseases.
- Understand cardiovascular disease in the dog and cat as a model of human cardiovascular disease.
- Understand joint diseases in the horse as a model for human joint diseases.
- Know nervous and neurodegenerative diseases in animals as a model of human nervous diseases.
- Understand the similarity between asthma in animals and man.

- Know diseases in whose pathogenesis the immunological alterations are relevant, both in animals and in man.
- Know tumour diseases in animals as a model of tumour diseases in humans.
- Understand similar reproductive diseases in animals and humans.
- Know similar behavioural diseases in animals and man.

2.3. Importance of learning goals

The content of this course will make the student understand the importance of the joint study of animal diseases and the human species in a current framework of "Global Health", because of their similarity in their causes or in their pathogenesis.

3. Assessment (1st and 2nd call)

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

The student must demonstrate that he/she has achieved the planned learning outcomes through the following assessment activities:

ACTIVITY 1: WRITTEN TEST FOR THE THEORETICAL EVALUATION

A final written test will be given based on the answer to 22 multiple choice and/or short questions. The test questions will be composed of four alternatives, only one of which will be correct. In case of failure, 0.20 will be deducted. The acquisition of basic theoretical knowledge of the subject will be evaluated.

The grade of the final written test will be between 0 and 10 and will represent 60% of the final grade of the course.

ACTIVITY 2: THEORY ASSIGNMENTS

In order to pass this activity, the student, alone or in a group of two people, must present, at the end of the course, a work in which he or she makes a comparative study of a disease that has common aspects in animals and in man, discussing the possibility of a possible animal model. The subject will be chosen by the student and can be related to the diseases taught during the course or different ones. The work will have no less than 10 single-sided, double-spaced sheets with wide margins. The assignment will be sent to the course coordinator.

The grade for this activity will be between 0 and 10, and it will be 2530% of the final grade of the course. This grade will take into account the following aspects:

- Originality of the work (50%).
- Drafting of the work (10%).
- Presentation (10%).
- Bibliographic review: autonomous search, understanding and interpretation (30%).

ACTIVITY 3: PARTICIPATION IN CLASS ACTIVITIES

Each student or groups must perform an oral presentation of the theory assignment of Activity 2 in front of the rest of the classmates and the two teachers of the subject.

In addition to the presentation itself, each student will have to ask some questions to the student presenting his or her work.

The grade for this activity will be between 0 and 10, and it represent the 15% of the final grade of the course. This grade will take into account the following aspects:

- Quality of presentation (75%).
- Originality of the questions asked to colleagues in their presentations (25%).

Summary table of evaluation activities and their reflection in the student's final grade

Assessment activities	Assessed contents	% Final grade
Written test	Theory sessions	60 %
Written assignment	Autonomous search for information and report writing	25 %
Participation in activities	Communication of conclusions and integration of knowledge	15 %

To qualify for continuous assessment, a student must have participated in all assessable activities.

Global assessment: Students who have not chosen the continuous assessment or who have not passed the subject by this procedure will have the right to sit for a global assessment that will consist of a written test that assesses the theoretical and practical contents of the subject. This test will have a score between 0 and 10 points. Assessment criteria: the written test will suppose 100% of the final grade.

Marking system

According with the Regulation of Learning Assessment Standards of the University of Zaragoza (Agreement of the Governing Council of 22 December 2010), the results obtained by the student will be graded according to the following numerical scale from 0 to 10, with the expression of one decimal place, to which the corresponding qualitative grade may be added:

- 0-4.9: FAIL.
- 5.0-6.9: PASS.
- 7.0-8.9: GOOD (NT).
- 9.0-10: EXCELLENT (SB).

Students with a grade over 9.0 might be awarded with honours and it could be given to more than the 5% of the enrolled students during the academic year.

In application of Article 158 of the Statutes of the University of Zaragoza, the provisional examination grades will be publicly displayed for a minimum of 7 days, and the students will be able to review their examinations, for which the place, date and time foreseen for this purpose will be indicated.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

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

The subject will be taught through theoretical classes and written work.

There will be 22 theoretical classes that will include animal diseases and similar diseases in the human species. The order of the classes will depend on the availability of the teachers. In addition, it will include the realization of a written work, presentation and defence of a topic chosen by the student that will suppose an autonomous work of face-to-face and non-face-to-face hours.

Summary table of the hour distribution of learning activities

Activity	Face to face (h)	Non face-to-face (h)
Lecture	22	0
Assignment	6	22
Student's autonomous work	0	23
Assessment test	2	0

4.2. Learning tasks

The program offered to the student to help him/her achieve the expected results includes the following activities:

Assignments will be done individually: or in groups of two people. The teachers will be able to suggest and guide the necessary documentation and will tutor the students in their performance. Students should contact the coordinator or a teacher for tutoring and guidance.

The student will need to work autonomously to study the theoretical topics of the course, the bibliographic search and the preparation of the works. However, the student will also be able to have periodic meetings with the tutor for planning and discussion of the development of the teaching work.

Finally, the assignment will be presented orally in class, in the presence of the rest of the students and discussed in class by all the students and the final assessment will be made by the teachers. The evaluation will take into account not only the originality and autonomy on its realization, but also the presentation, defence and critical analysis.

The theoretical contents will be evaluated by means of a written exam. This will be prepared and evaluated by the different teachers who participate in the subject.

4.3. Syllabus

THEORY SESSIONS:

Topic 1: Introduction to Comparative Medicine.

Topic 2: Metabolic diseases: Diabetes in the dog and cat.

Topic 3: Metabolic diseases: Obesity in the dog and cat.

- Topic 4:** Metabolic diseases: Obesity in humans.
- Topic 5:** Cardiovascular diseases: cardiomyopathies in the dog and cat.
- Topic 6:** Cardiovascular diseases: cardiomyopathies in humans.
- Topic 7:** Joint and skeletal diseases: joint problems in horses.
- Topic 8:** Joint and skeletal diseases: joint problems in humans.
- Topic 9:** Nervous and neurodegenerative diseases in animals.
- Topic 10:** Nervous and neurodegenerative diseases in humans.
- Topic 11:** Environmental diseases: asthma in horses.
- Topic 12:** Environmental diseases: asthma in humans.
- Topic 13:** Diseases with immunological disorders: inflammatory bowel disease in animals.
- Topic 14:** Immune-disturbed diseases: Crohn's disease.
- Topic 15:** Tumour diseases: sheep pulmonary adenocarcinoma.
- Topic 16:** Tumour diseases: tumours in dogs and cats.
- Topic 17:** Tumour diseases: tumours in humans.
- Topic 18:** Reproductive diseases: infertility in animals.
- Topic 19:** Reproductive diseases: male infertility in humans.
- Topic 20:** Behavioural diseases: cognitive dysfunction syndrome in dogs.
- Topic 21:** Behavioural diseases: cognitive dysfunction syndrome in humans.

ASSIGNMENTS

Individual or group work: diseases as an animal model (Bibliographic Review)

Each student or group of two people will choose a disease and perform a literature review on it, compiling similar factors between the animal disease and the human species. In addition, they will make a presentation in class and participate in the evaluation of their classmates by asking questions after the different presentations.

4.4. Course planning and calendar

The calendar of the master and the programming of the theory and practice 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/>

The dates for the theoretical assessment test will be scheduled each year according to the Master's Degree in Global Health and will be available for the student at the time of the enrolment. Teaching assignments will be delivered, at the latest, one ~~week~~ or two weeks after the end of the other teaching activities.

Coordinators:

Bernardino Moreno Burgos email: bmoreno@unizar.es
Mariano José Morales Amella email: mjma1962@unizar.es; mariano@albeitar.com

Tutorials:

Tutorials will be scheduled in the start of the academic year.

4.5. Bibliography and recommended resources

The bibliography for the current academic year is kept up to date and can be consulted on the Library's website (search for recommended bibliography at biblioteca.unizar.es).

Scientific articles: the use of Pubmed is recommended for the updated search of scientific articles.