

Academic Year/course: 2022/23

66850 - One Health: Origin, evolution and future

Syllabus Information

Academic Year: 2022/23

Subject: 66850 - One Health: Origin, evolution and future

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:

The general goal of this course is to introduce the student to the concept, the components and the working strategies of the One Health paradigm, make him/her aware of its history and identify its importance in addressing current health issues affecting PUBLIC HEALTH. Within this context, ONE HEALTH proposes the necessary training to understand the different models of emerging zoonoses, identifying the essential components: the BIOLOGY of the living beings involved (humans, animals and micro-organisms), the ENVIRONMENT and the ANTHROPOLOGICAL component as essential determinants for health and disease.

These approaches and objectives are well aligned with the Sustainable Development Goals (SDG) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/>), thus the learning outcomes of the subjects will provide students the necessary training and competences to contribute, to some extent, to their achievement:

Goal 1: No Poverty

Goal 2: Zero Hunger

Goal 3: Good Health and Well-Being

Goal 4: Quality Education

Goal 5: Gender Equality

Goal 6: Clean Water and Sanitation

Goal 7: Affordable and Clean Energy

Goal 8: Decent Work and Economic Growth

Goal 9: Industry, Innovation, and Infrastructure

Goal 10: Reduced Inequalities

Goal 11: Sustainable Cities and Communities

Goal 12: Responsible Consumption and Production

Goal 13: Climate Action

Goal 14: Life Below Water

Goal 15: Life on Land

Goal 16: Peace, Justice and Strong Institutions

Goal 17: Partnerships

1.2. Context and importance of this course in the degree

This course, which is compulsory, frames the working context of the ONE HEALTH philosophy and introduces the bases for what it will be the subsequent development of the rest of the subjects of the master's degree. It presents the necessary components for understanding key aspects of the development of an emerging disease and for proposing measures to fight it. All of this makes clear, from the very beginning, the need to work by integrating different disciplines (multidisciplinary) in order to solve present and future health challenge.

This is a compulsory subject that provides indispensable knowledge in order to subsequently develop the mechanisms for the control and prevention of these processes from a multidisciplinary perspective.

It complements other subjects in the specialty such as Ecology and Ecotoxicology, Food Safety (Methodology for the Evaluation of Food Risks and New Tools in Food Safety) and Health Promotion and provides the indispensable knowledge to students seeking more specific training in Public Health. A One Health perspective that considers human-animal-environmental interaction and creates interprofessional collaborations benefits comparative medicine and translational research in the development of research models, therapies and vaccines.

1.3. Recommendations to take this course

It is recommended that the student has basic knowledge on Biology, Epidemiology, Ecology, Microbiology, Parasitology, Infectious diseases and Parasitic diseases. Due to the varied profile of access to this master, if necessary, the basic material essential for the understanding of the subject will be provided at the beginning of the classes.

2. Learning goals

2.1. Competences

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

- Identify, classify and evaluate the essential biological, environmental and anthropological determinants of One Health.
- Know and apply European and national regulations in matters of Public Health and health research and general response strategies.
- Understand the One Health concept, its history and its importance in addressing current Public Health issues.
- Work on health and disease from a multidisciplinary perspective
- Understand infection and disease patterns that alter collective health in the context of the One Health working concept.

2.2. Learning goals

- Understand the basis of the One Health philosophy, its origin, and future.
- Understand the basis of infections and diseases and their evolution from individual to population.
- Identify current and future determinants of disease emergence.
- Understanding epidemiological models of emergent diseases and their impact on global health.
- Know the possibilities of response to diseases with an interdisciplinary perspective.
- Analyse regulation and the role of health organisations in the context of global health.

2.3. Importance of learning goals

The subject is fundamental to subsequently understand the reason for certain methodological approaches that will be used in ONE HEALTH, to understand the components of the main emerging diseases of today such as: their origin and functioning, factors or elements behind them or their impact at a population level.

The practical component of the course will allow the theoretical concepts presented to be placed in real environments and will also contribute to the acquisition and improvement of some of the transversal skills necessary for working in ONE HEALTH, tools such as the ability to communicate, to make decisions, or to work in a team, all of which are part of the work as health professionals and professionals involved in solving real cases.

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:

Theoretical content will not be assessed by examination. The result of learning these contents is evaluated by means of the following activities:

THEORETICAL ASSIGNMENTS AND WRITTEN PROJECTS

This activity will consist of the evaluation of a technical report/scientific document and its presentation to the classroom that students will carry out from the stage of in situ training associated with the field trip.

Once the work is done, the students will send the report to the tutor who, together with the other teachers participating in the activity, will evaluate it according to: the methodology used, the analysis of the information carried out, the results obtained and the final presentation of the report. The grade will be from 0 to 10. The grade will be 100 % of the student's final grade in the subject.

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Assessment activities	Assessed contents	% Final grade
theoretical assignments and written projects	Theoretical-practical: Preparation of technical report or scientific document	100 %

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 the resolution and presentation of a case based on the theoretical contents of the subject. The presentation of the case will be evaluated by a group of professors selected from among the speakers of the subject (depending on the topic of the case assigned to solve).

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.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

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

The structure of the course includes a theoretical block with 27 face-to-face hours classes in classrooms of the Faculty (lectures). The theory sessions will develop the working concepts to understand the meaning of ONE HEALTH and its application in the field of public health while the practice sessions will raise the applicability of those concepts on cases.

The material prepared by the teaching staff will be included, before the teaching of the lecture, in the subject within the structure of the virtual campus of the University of Zaragoza (ADD). Together with this teaching material, the cases and experiences that will be worked on in the practical sessions will be included.

The training is completed with 20 hours of training activity that includes both theoretical concepts and practical activity and that will be developed in situ during a voluntary field trip (or a substitute activity based on the resolution of a case that will be developed under the permanent supervision of the teacher throughout tutorials).

The training will be completed with a 3-hour practical block divided into two sessions.

All the information related to the field activity (the excursion or the substitute activity) and all the process of development of the later work will be explained in the script of the activity that will be given to the students in the first days of class of the subject and will be uploaded to the ADD with the rest of didactic material.

The activity will be supervised at all times by a tutor in order to clarify any doubts or problems that may arise and to guide the execution of the work at all times.

Summary table

Teaching activity	
Lecture (in classroom)	27 face to face hours
Fieldwork (on volunteer excursion or substitute work)	20 face to face hours
Practice sessions	7 face to face hours
Student's autonomous work	90 hours
Assessment test	6 face to face hours
Total	150h

4.2. Learning tasks

The programmed offered to students to help him/her achieve the expected results includes various activities.

Theory sessions: A total of 27 hours of lectures in the classroom.

Practice sessions: 7 hours of practical activities distributed in 3 classroom and outside sessions to work with cases that will be solved by groups or individually depending on the number of students enrolled in the subject.

Fieldwork (excursion to the Pyrenees) or substitute work: It consists of a block of 20 hours of training in different geographical environments taking advantage of a voluntary field trip. For those students who decide not to go on the field trip, a substitute activity will be carried out based on the resolution of a proposed case with similar characteristics to those carried out on the trip.

4.3. Syllabus

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

The structure of the course includes a theoretical block with 27 face-to-face hours classes in classrooms of the Faculty (lectures). The theory sessions will develop the working concepts to understand the meaning of ONE HEALTH and its application in the field of public health while the practice sessions will raise the applicability of those concepts on cases.

The material prepared by the teaching staff will be included, before the teaching of the lecture, in the subject within the structure of the virtual campus of the University of Zaragoza (ADD). Together with this teaching material, the cases and experiences that will be worked on in the practical sessions will be included.

The training is completed with 20 hours of training activity that includes both theoretical concepts and practical activity and that will be developed in situ during a voluntary field trip (or a substitute activity based on the resolution of a case that will be developed under the permanent supervision of the teacher throughout tutorials).

The training will be completed with a 3-hour practical block divided into two sessions.

All the information related to the field activity (the excursion or the substitute activity) and all the process of development of the later work will be explained in the script of the activity that will be given to the students in the first days of class of the subject and will be uploaded to the ADD with the rest of didactic material.

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Summary table

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Practice sessions	3 face to face hours
Student's autonomous work	90 hours
Assessment test	10 face to face hours
Total	150h

4.2. Learning activities

The programmed offered to students to help him/her achieve the expected results includes various activities.

Theory sessions: A total of 27 hours of lectures in the classroom.

Practice sessions: 3 hours of practical activities distributed in 2 classroom sessions to work with cases that will be solved by groups or individually depending on the number of students enrolled in the subject.

Fieldwork or substitute work: It consists of a block of 20 hours of training in different geographical environments taking advantage of a voluntary field trip. For those students who decide not to go on the field trip, a substitute activity will be carried out based on the resolution of a proposed case with similar characteristics to those carried out on the trip

4.3.Syllabus

A. THEORY SESSIONS IN CLASS: (Lectures) (27 hours)

To be taught in the teaching rooms of the Veterinary Faculty. It includes 18 different topics taught by professors from the University of Zaragoza and by external national or international professionals.

1. Global Health and Governance.
2. The One Health paradigm. History.
3. Human-animal interaction in Public Health and the third link: the environment.
4. Human-animal interface.
5. Ecosystem services for societal well-being
6. Principles of infection and disease: from individual to population.

7. Health and disease determinants.
8. The microbiology of emerging diseases.
9. Rationale for emergence of emerging zoonoses.
10. Climate change and disease. Anthropology in global health.
11. Anthropology in Global Health
12. The concept of population medicine in veterinary and human medicine.
13. Social determinants of health: social inequalities
14. Introduction to primary health care.
15. Biological rhythms and environmental synchronization.
16. Cooperation, NGOs and Humanitarian Medicine/Veterinary.
17. International Alerts, International Organizations and Global Health.
18. Areas of action in Public Health; Mandatory Declared Diseases.

B- ONSITE TRAINING ACTIVITIES (voluntary field trip or substitute activity): (20 hours)

They are training activities, which include theoretical and practical content, given in different geographical environments, in the context of a two-day excursion to the Pyrenees, where those responsible for each centre visited will explain, together with the teachers of the subject, the One Health approach to their work. The specific details of this block of classes and of all the off-site activity that is subsequently linked, will be detailed in the ADD of the subject.

C- PRACTICE SESSIONS (7 hours)

There are two practical sessions to be carried out in person:

Practice session 1: Cases of illness and weather 1 hour

Practical session developed in the computer room working with disease simulation models.

Practice session 2: Anthropology in the veterinary field 1 hour

Practice session developed in the computer room working on the development of a protocol for collecting information for an anthropological investigation of a disease outbreak.

Practice session 3: Work carried out on the premises of the Faculty of Veterinary Medicine and its surroundings to assess determinants that may have an impact on health. 5 hours

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, on the following address: <http://veterinaria.unizar.es/>

Assignments will be handed in, at the latest, one week after the end of the other teaching activities.

Coordinator:

Carmelo Ortega Rodríguez. email: epidemia@unizar.es

Tutorials:

The office hours will be set on the start day of the course in each academic year.

4.5. Bibliography and recommended resources

The list of updated bibliography, presentations and recommended resources will be displayed in the ADD.