Methodologies Applied to the Multidisciplinary Environment of One Health

Code: 43756
ECTS Credits: 9

2025/2026

Degree	Type	Year
Zoonoses and One Health	OB	0

Contact

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

As a requirement for admission you must be in possession of any of the titles listed below:

Graduates, Graduates or Diploma in the field of Health Sciences (Veterinary Medicine, Nursing, Pharmacy, Food Science and Technology, Animal Science and Health, Biomedicine, Psychology ...) and Life Sciences (Biology, Biochemistry, Biotechnology , Zoology, Botany, Ecology, Biodiversity, Environmental Sciences, Agronomic Engineering, Forestry ...) or equivalent.

Objectives and Contextualisation

The basic tools necessary to work with the One Health approach will be complemented taking into account interactions with different sectors, such as risk analysis, environmental health (climate change and its repercussions on the distribution of diseases), human behavior (socio-economic and cultural change of civilizations) and the impacts of globalization as future threats to the health of all its inhabitants.

Work will be carried out in detail on disease surveillance through this integrated approach to health in humans, animals, the environment and the ecosystem. It will provide a series of theoretical and technical knowledge useful for the development of protocols for action and contingency in the face of health problems as well as the fundamentals in risk management and communication.

Competences

- Act in accordance with the code of ethics of the profession.
- Communicate and justify conclusions clearly and unambiguously to both specialist and non-specialist audiences.
- Continue the learning process, to a large extent autonomously.
- Display understanding and familiarity with using the methodologies and tools of zoonotic risk assessment based on the concept of One Health.
- Manage and report on the risk of zoonoses in special situations, health emergencies or biological threats.

- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Take decisions on the establishment of zoonosis surveillance and containment plans.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Work alone or in a multidisciplinary team within the area of study, showing critical reasoning and creativity, and the ability to analyse, interpret and synthesise the data generated.

Learning Outcomes

1. Apply the methodologies used in sociological and economic studies in the context of One Health.
2. Apply the technical bases for developing and implementing surveillance and contingency programmes.
3. Find information on health alerts through the available online resources.
4. Interpret the tools for laboratory diagnosis of diseases.
5. Know and interpret the tools for laboratory diagnosis of infectious diseases.
6. Know the fundamental principles of risk management and communication in special situations and in biological emergencies or threats.
7. Know the fundamental principles of risk management and communication in the different levels of society.
8. Know the methodologies used in Environmental Health and wildlife in the context of One Health.
9. Know the methodologies used in sociological, economic, environmental health and ecological studies in the context of One Health.
10. Know the profession and the political, economic, social and cultural contexts in which it will be practised.
11. Know the technical bases for developing and implementing surveillance and contingency programmes for zoonoses.
12. Work alone or in a multidisciplinary team within the area of study, showing critical reasoning and creativity, and the ability to analyse, interpret and synthesise the data generated.

Content

- Environmental Health and Ecology

- Methods of laboratory diagnosis: microbiology and molecular biology

- Health economics

- Sociology and Health

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Classes of problem solving, cases and exercises	31	1.24	2, 1, 5, 10, 12
Debates	3	0.12	2, 7, 6, 11, 12
Master classes / Exhibition classes	22	0.88	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Problem-based learning	4	0.16	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Type: Supervised			

Resolution of cases, exercises and problems in a virtual way	35	1.4	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Tutorials	10	0.4	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Type: Autonomous			
Personal study	50	2	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Reading articles and reports of interest	30	1.2	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Realization of works / reports	40	1.6	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3

Directed activity:

Master classes / Exhibition classes
Problem-based learning
Debates
Problem solving classes / cases / exercises

Supervised activity:

Tutorials
Resolution of cases / exercises / problems in a virtual way

Autonomous activity:

Realization of works / reports
Reading articles / reports of interest
Personal study

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Delivery of reports / works	15	0	0	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Oral exposure cost of diseases	35	0	0	2, 1, 7, 6, 5, 10, 11, 9, 8, 4, 12, 3
Synthesis test	50	0	0	2, 1, 6, 10, 11, 9, 8, 4

A. The assessment of the students will be done through a combination of the following criteria:

- It is mandatory to attend at least 80% of the presential classes. Attendance to lectures and participation in the activities carried out individually or in groups during those sessions will be recorded. Non justified absences for a given activity are not accepted. In case of a justified absence (illness, work issues, etc.) the qualification of this activity will be considered but restrictions may apply.

- In the teamwork and oral presentations, the assessment will consider the quality and clarity of the presentation and the knowledge demonstrated during the discussion of the subject.

B. To pass this module, compulsory attendance is required at a minimum of 80% of the on-site class hours of the module. The final average grade of the module must be equal to or greater than 5 out of 10.

C. In the case of failing, the students will have an additional opportunity consisting in a synthesis exam in which they must obtain at least 4 out of 10 points.

Oral presentations (35%)

Classroom activity on laboratory diagnostic tools in animal health (15%)

Synthesis exam (50%)

It will include questions on all the topics covered throughout the module except those ones already evaluated during the oral presentations and the classroom activity (i.e., risk analysis, cost of diseases and workshop on laboratory diagnostic tools). A minimum mark of 4/10 is required to be able to average with the rest of the scores.

Students who do not do any assignment will be "non-evaluable"

Bibliography

Economía de la Salud (Health economics).

Rushton, J.; Bruce, M. (2016) Using a One Health approach to assess the impact of parasitic disease in livestock - how does it add value?. Parasitology

Rushton, J. (2015) Antimicrobial use in animals, how to assess the trade offs. Zoonoses and Public Health 62 (suppl. 1) (2015) 10-21

Babo Martins, S. and Rushton, J. (2014) Cost-effectiveness analysis - adding value to animal health, welfare and production assessment. OIE Revue Scientifique et Technique 33(3):681-9.

Rushton, J. Guest Editor (2012) A special edition on the Economics of Animal Health Eurochoices

Rushton, J. (2009) The Economics of Animal Health and Production. Foreward by Peter Ellis with contributions from Andrew James, Alexandra Shaw, David Leonard, Clem Tisdell, Joachim Otte,Alistair Stott, Hernan Rojas, Pascal Bonnet, C. Devendra, Liz Redmond, Harvey Beck, Ugo Pica-Ciamarra, Matthieu Lesnoff, Vinod Ahuja, Martin Upton & Rommy Viscarra. CABI Publishing, Wallingford, UK. Pages 364

Modelos cualitativos y estudios sociológicos (qualitative models and sociological studies).

Azofra Márquez, M.J. (1999) *Cuestionarios*. Cuadernos Metodológicos, núm. 26. Madrid: Centro de Investigaciones Sociológicas.

Valles, M.S. 1997. *Técnicas cualitativas de investigación social. Reflexión metodológica y práctica profesional*. Madrid: Síntesis.

Prades, A.; Espluga, J.; Horlick-Jones, T. (2015) "Riesgos tecnológicos, conflictos sociales y políticas ambientales. Del estudio de las percepciones a la implicación pública". *Papers, Revista de Sociologia,* núm. 100 (4): 395-423. DOI: http://dx.doi.org/10.5565/rev/papers.2223

Renn, Ortwin (2008): *Risk Governance. Coping with Uncertainty in a Complex World*, London: Earthscan.

Slovic, Paul (2000): *The perception of risk*, London: Earthscan.

Salud Ambiental y Ecología (Environmental Health and Ecology).

Mark J. Nieuwenhuijsen. (2003). Exposure Assessment in Environmental Epidemiology

Vigilancia epidemiológica

Mo Salman (2003) Animal Disease Surveillance and Survey Systems: Methods and Applications

Comunicación del riesgo (Risk Communication).

Emerging zoonoses: Responsible communication with the media-lessons learned and future perspectives Article *in* International journal of antimicrobial agents 36 Suppl 1:S80-3 · November 2010 Impact Factor: 4.30 · DOI: 10.1016/j.ijantimicag.2010.06.028 · Source: PubMed

Infanti J, Sixsmith J, Barry MM, Núñez-Córdoba J, Oroviogoicoechea-Ortega C, Guillén-Grima F. A literature review on effective risk communication for the prevention and control of communicable diseases in Europe. Stockholm: ECDC; 2013

Interdisciplinary perspectives on the management of infectious animal and plant diseases Papers of a Theme issue compiled and edited by Philip Lowe, Jeremy Phillipson, Laura E. Green, Stephen Hunter, Michael J. Jeger, Guy M. Poppy and Jeff Waage

Kasperson, R. E., Renn, O., Slovic, P., Brown, H. S., Emel, J., Goble, R., Kasperson, J. X. and Ratick, S. (1988), The Social Amplification of Risk: A Conceptual Framework. Risk Analysis, 8: 177-187. doi:10.1111/j.1539-6924.1988.tb01168.x

Luis González Vaqué, "La prevención y represión de los fraudes alimentarios en la Unión Europea". *Revista CESCO* (2015) 125-142: https://www.revista.uclm.es/index.php/cesco/article/view/873/695

Tetty Havinga y otros, "The Changing Landscape of Food Governance - Public and Private Encounters". Edward Elgar Publishing (2015) 288 págs.

Luis González Vaqué, "Lecciones de Derecho alimentario 2015-2016". Aranzadi (2015) 395 págs.

Matteo Ferrari, "Risk Perception, Culture, and Legal Change - A Comparative Study on Food Safety in the Wake of the Mad Cow Crisis". Routledge (2009) 216 págs

Software

In thismodule, the use of Artificial Intelligence (AI) technologies is allowed as an integral part of the development of the work, provided that the final result reflects a significant contribution of the student in the analysis and personal reflection. The student must clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how these have influenced the process and the final result of the activity. The lack of transparency in the use of AI will be considered a lack of academic honesty and may lead to a penalty in the grade of the activity, or greater sanctions in serious cases.

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAULm) Classroom practices (master)	1	English	first semester	morning-mixed

(TEm) Theory (master)	2	English	first semester	morning-mixed