

One Health: Introduction, Health Policy and Epidemiological & Statistical Methods

Code: 43755

Credits: 12

2026/2027

Degree programme	Type	Course
Zoonoses and One Health	OB	1

Contact lecturer

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Teaching staff

Alberto Oscar Allepuz Palau

Group languages

You can consult this information at the [end](#) of the 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

Definitions, objectives and critical knowledge of the multidisciplinary nature of the One Health concept will be provided as a strategy for solving problems, focusing on the control of health with respect to people, domestic and wild animals and in the related ecosystem.

The official bodies and institutions involved, their functions, competences and interactions will be detailed. The risk analysis defined in the SPS agreement is a sequential process comprised by Risk Assessment, Management and Communication that must be transparently exposed and available to all public institutions and governments or private organizations. For this reason, each institution at the regional, national, community or international level has an assigned body (s) and entities responsible for risk analysis, which will be shown throughout the module.

Taking into account the need to establish an adequate risk assessment, a series of useful theoretical and

technical knowledge will be provided to identify risk and make decisions. In this module you will learn basic notions of epidemiology, statistical and mathematical models and their application to epidemiological studies and risk assessment.

Learning outcomes

- CA01 (Interpret health and epidemiological data to support decision-making on health issues with a One Health approach.) Interpret health and epidemiological data to support decision-making on health issues with a One Health approach.
- CA02 (Design innovative strategies to prevent emerging and re-emerging diseases and improve food security, integrating the One Health approach.) Design innovative strategies to prevent emerging and re-emerging diseases and improve food security, integrating the One Health approach.
- CA03 (Promote lifelong training and professional updating in health risk management, integrating the One Health approach into prevention and response strategies to health alerts.) Promote lifelong training and professional updating in health risk management, integrating the One Health approach into prevention and response strategies to health alerts.
- KA01 (Explain the role of international bodies in public, animal and environmental health.) Explain the role of international bodies in public, animal and environmental health.
- KA02 (Explain the rationale for epidemiological surveillance to prevent and control health risks from zoonotic diseases.) Explain the rationale for epidemiological surveillance to prevent and control health risks from zoonotic diseases.
- KA03 (Describe basic epidemiological and statistical techniques in the context of One Health.) Describe basic epidemiological and statistical techniques in the context of One Health.
- SA01 (Use epidemiological and statistical programmes to analyse health data.) Use epidemiological and statistical programmes to analyse health data.
- SA02 (Design epidemiological analysis and surveillance plans applied to zoonotic risk management.) Design epidemiological analysis and surveillance plans applied to zoonotic risk management.

Contents

- Introduction to the One Health Concept
- Official bodies: organization chart and risk assessment, management and communication functions
- Epidemiology and surveillance
- Basic and advanced Statistics

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Debates	6	0.24	KA01, KA02
Personal study	85	3.4	CA01, CA02, CA03, KA01, KA02, KA03, SA01, SA02
Tutorials	15	0.6	SA01

Resolution of cases, exercises and problems in a virtual way	35	1.4	SA01, SA02
Problem-based learning	25	1	CA01, CA02, KA01, KA02, SA01
Realization of works / reports	42	1.68	CA01, CA02, CA03, KA01, KA02, KA03, SA01, SA02
Reading articles and reports of interest	45	1.8	CA01, CA02, CA03, KA01, KA02, KA03, SA01, SA02
Master classes / Exhibition classes	13	0.52	CA01, CA02, CA03, KA01, KA02, KA03, SA01, SA02
Classes of problem solving, cases and exercises	34	1.36	CA01, KA03, SA01

Directed activity:

Master classes / Exhibition classes

Problem-based learning

Debates

Problem solving classes / cases / exercises

Supervised activity:

Tutorials

Resolution of cases, exercises and problems

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

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Delivery of reports / works	40	0	0	CA01, KA03, SA01
Oral presentations of works	60	0	0	CA01, CA02, CA03, KA01, KA02, SA01, SA02

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 take into account 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 complementary work in which they must obtain at least 5 out of 10 points.

- Oral presentations (60%):

Oral presentation on the role of official bodies (20%)

Oral presentation on descriptive epidemiology (40%)

- Written works (40%):

Descriptive statistics (20%)

Simple and logistic regression (20%)

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

Any irregularity in an assessment act (academic fraud, plagiarism or improper use of AI, unless this use is expressly authorized in the teaching guide), which may lead to a significant variation in the grade, means that this act will be graded with a 0. In the event that the teaching guide provides that in order to pass the subject it is an essential requirement to have obtained a minimum grade in this assessment act or that several irregularities occur in the assessment acts of the same subject, the final grade for this subject is 0. Apart from this, a disciplinary process may be initiated against the student who incurs any of these irregularities.

Bibliography

- Introducción a Una Sola Salud (One Health concept)

The evolution of One Health: a decade of progress and challenges for the future. Downloaded from veterinaryrecord.bmj.com on September 29, 2014 - Published by group.bmj.com:

https://www.onehealthcommission.org/documents/news/Gibbs_The_evolution_of_One_Health_BBE95DE2EA279

<http://www.onehealthinitiative.com/about.php>

http://www.fao.org/ag/againfo/home/en/news_archive/2010_one-health.html

-Organismos oficiales: organigrama y funciones de evaluación, gestión y comunicación de riesgos (Official Institutions and their role in Risk Management and Communication).

* United Nations

WTO- SPS agreement. Impact on Public Health Food safety, Animal & Plant Health
https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm

WHO. Areas of work in food safety and zoonosis: http://www.who.int/foodsafety/areas_work/en/

FAO. Contributing to One World , One Health <http://www.fao.org/docrep/011/aj137e/aj137e00.htm>

CODEX ALIMENTARIUS. Public Health, Food safety, Animal and Plant Health.

<http://www.fao.org/fao-who-codexalimentarius/codex-home/en/>

* World Animal Health (OIE). <http://www.oie.int/en/> . The concept of One health.

<http://www.oie.int/en/for-the-media/onehealth/>

* European Union.

Overview of EU activities Public Health, Animal & Plant Health and Food safety:

http://ec.europa.eu/health/index_en.htm

General Food law (Food , Feed , Animal & Plant legislation):

http://ec.europa.eu/food/safety/general_food_law/index_en.htm

EFSA: <http://www.efsa.europa.eu>

ECDC: <http://ecdc.europa.eu/en/Pages/home.aspx>

ECDC-EFSA Rapid risk assessments:

http://ecdc.europa.eu/en/publications/risk_assessment/Pages/default.aspx

EMA: <http://www.ema.europa.eu/ema/>

Antimicrobial resistance:

http://www.ema.europa.eu/ema/index.jsp?curl=pages/special_topics/general/general_content_000439.jsp

Maximum residues levels MRL:

http://www.ema.europa.eu/ema/index.jsp?curl=pages/regulation/document_listing/document_listing_000165.jsp&

European National Agencies:

<http://www.bfr.bund.de/cm/364/eu-food-safety-almanac.pdf>

* United States:

FDA. Home page <http://www.fda.gov> FDA organigram

<http://www.fda.gov/AboutFDA/CentersOffices/OrganizationCharts/ucm393155.htm>

Center for Food Safety and Applied Nutrition

<http://www.fda.gov/AboutFDA/CentersOffices/OfficeofFoods/CFSAN/default.htm>

Center for Veterinary Medicine <http://www.fda.gov/AboutFDA/CentersOffices/OfficeofFoods/CVM/default.htm>

Opinion article from FDA about One health:

<http://www.fda.gov/animalveterinary/resourcesforyou/animalhealthliteracy/ucm278139.htm>

Centre of Disease Control (CDC): <http://www.cdc.gov/foodborneburden/PDFs/CDC-and-Food-Safety.pdf>

Office of Regulatory Affairs:

<http://www.fda.gov/AboutFDA/CentersOffices/OfficeofGlobalRegulatoryOperationsandPolicy/ORA/default.htm>

USDA (United States Department of Agriculture) APHIS One health concept :

<http://www.usda.gov/wps/portal/usda/usdahome?navid=onehealth>

https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/SA_One_Health

EPA Environmental Protection Agency Activities in Public Health , animal Health and Plant health:

<https://www.epa.gov/aboutepa>

* Otros:

Transatlantic Taskforce on Antimicrobial Resistance - TATFAR -

<http://ecdc.europa.eu/en/activities/diseaseprogrammes/TATFAR/Pages/index.aspx>

<http://www.cdc.gov/drugresistance/tatfar/index.html>

J. Serratosa, Oriol Ribo 2009 International context and impact of EFSA activities in animal welfare in the European Union. 2009 Elsevier (Book- 275-303 pp) Welfare of animal production : assessment and management of risks.

- Epidemiología y análisis de riesgo

Dohoo I., Martin W., Stryhn H. (2009) Veterinary Epidemiologic Research - 2nd Edition.

Dirk U. Pfeiffer, Timothy P. Robinson, Mark Stevenson, Kim B. Stevens, David J. Rogers, and Archie C.A. Clements. (2008). Spatial Analysis in Epidemiology.

Thrusfield, M. (2005) Veterinary Epidemiology. (3ª ed.) Ed. Blackwell Science. Oxford.

OIE (2004) Handbook on Import Risk Analysis for Animals and Animal Products, vol. 2. World Organization for Animal Health (Office International des Epizooties), Paris, France.

R. Bonita, R. Beaglehole, T. Kjellström. Basic epidemiology. 2nd edition. World Health Organization.

- Modelización estadística

David Collett. Modelling Survival Data in Medical Research. 2nd edition. Chapman & Hall.

Hosmer, DW, Lemeshow S. Applied logistic regression. New York. John Wiley & Sons. 2000.

Katz MH. Multivariable Analysis: A Practical Guide for Clinicians. Cambridge University Press, 2006.

Kleinbaum, David G., Klein, Mitchel. Survival Analysis. A Self-Learning Text, Third Edition. Springer.

Lawson A. (2013). Bayesian disease mapping.

Rawlings JO, Pantula SG, Dickey DA. Applied Regression analysis. A research Tool. Second Edition. Springer

Saez M, Saurina C. (2007). Estadística y Epidemiología Espacial. Girona: Documenta universitaria.

Software

QGIS (<https://qgis.org/ca/site/>)

R (<https://www.r-project.org/9>)

Use of AI: In this module, 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.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
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(PAULm) Classroom practices (master)	1	English	first semester	morning-mixed
(TEm) Theory (master)	2	English	first semester	morning-mixed

PROVISIONAL