

Health and Environment

Code: 100747
ECTS Credits: 6

| Degree | Type | Year | Semester |
|-----------------|------|------|----------|
| 2500250 Biology | OB | 3 | 1 |

Contact

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Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Teachers

Xavier Jordana Comin

Prerequisites

There are no prerequisites.

Objectives and Contextualisation

The course of Health and Environment is integrated in the field of Human Biology and, together with the course of Human Biology (second year), give the basics of human biology that can deepen with fourth year courses (Forensic Anthropology, Molecular Anthropology, Human Genetics, Human Origins and Primatology).

In this context, the main goal of the Health and Environment course is to study the relationship between man and the environment, including culture and society in a specific anthropogenic environment, in which health is understood as a measure of successful adaptation to the environment. The tools of demography and epidemiology for the study of health state of the human populations are introduced and the different aspects of the human variability at the morphological, physiological and genetic levels are worked, in relation to the adaptation, the acclimatization and adjustment to the environment. The role of different abiotic and biotic factors in the adaptability of the human species is studied. Health-related issues when adapting balance are changed are also discussed.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Analyse and interpret the origin, evolution, diversity and behaviour of living beings.
- Apply statistical and computer resources to the interpretation of data.
- Be able to analyse and synthesise
- Be able to organise and plan.
- Characterise, manage, conserve and restore populations, communities and ecosystems.
- Control processes and provide services related to biology.
- Develop a sensibility towards environmental issues.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Understand the processes that determine the functioning of living beings in each of their levels of organisation.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Analyse present and past intra-population and inter-population variability in our species.
3. Analyse the mechanisms that generate biological diversity in our species and interpret their adaptive significance and the mechanisms that maintain this diversity.
4. Analyse the sex- or gender-based inequalities and the gender biases present in one's own area of knowledge.
5. Analyse the sustainability indicators of the academic and professional activities within the area, integrating the social, economic and environmental dimensions.
6. Apply statistical and computer resources to the interpretation of data.
7. Be able to analyse and synthesise.
8. Be able to organise and plan.
9. Critically analyse the principles, values and procedures that govern the exercise of the profession.
10. Detect problems associated with population changes and design alternatives.
11. Develop a sensibility towards environmental issues.
12. Identify the natural and artificial factors that affect human health.
13. Identify the principal natural factors that have intervened in the distribution of human populations.
14. Interact with and advise government institutions operating in the field of social policy and population and public health policy.
15. Interpret values of human demography and epidemiology.
16. Interrelate the environmental, biological and cultural data that merge in the interpretation of human evolution.
17. Propose new methods or well-founded alternative solutions.
18. Propose projects and actions that incorporate the gender perspective.
19. Propose ways to evaluate projects and actions for improving sustainability.
20. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.

21. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
22. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
23. Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
24. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
25. Work in teams.

Content

Theory

The subject of Health and Environment consists of six blocks of conceptual contents, eminently theoretical that will be developed following different strategies. Classes are conceived in a dynamic model that seeks to create discussion moments and to clarify wrong preconceived ideas. A conceptual outline of the subject will be presented to students what would allow them to carry out programmed activities of greater complexity, such as reading and discussing articles, visualization and discussion of videos, or applying the of theoretical concepts to the projects and practical works of the subject, and, in this way, deepen the different topics. During the exposition of the topics these will be framed in the different objectives of sustainable development and issues of gender perspective will be noted such as inequalities due to sex/gender in the design of epidemiological studies and the importance of sex/gender as a risk factor in health problems.

Block I- Presentation and Introduction to the subject

Block II - Demography and Epidemiology

Block III - Interaction of genes and environment

Block IV- Human Nutrition

Block V - Human Adaptation to environment

Block VI - Disease in evolutionary perspective

Computer practices

One of the practice groups will be in English; Students can join freely in this group before the beginning of the course

1. Demography and epidemiology practices

The practices of demography and epidemiology are aimed at providing the bases and general guidelines of the demography and epidemiology project - research project or Learning and Service (ApS). In the project, concepts developed in Block II of theory - demography and epidemiology - are applied, but also other concepts being developed throughout the course. This project aims to make a descriptive study of a health problem in Spain, considering its distribution according to age and sex, over time, in different regions of the country, and finally relate its distribution to the other risk factors that may be related to the selected health problem.

The practices in computer classroom of demography and epidemiology consist of 5 sessions. Each session addresses practical aspects that students can apply to the development of their research project and the teacher makes a personalized follow-up of the work that each group is developing. To streamline the entire procedure, students have video tutorials developed by the teachers of the subject that facilitate the automation of routine procedures in Excel, Access, JAMOV, etc.

2. Balanced and sustainable diet practices

To develop the subjects of human adaptation and nutrition, 2 computer classroom practice sessions are taught. The results of the two practices will be the basis to perform the work of Balanced and sustainable diet.

Students perform assessment of their diet or from another provided by the teacher, based on dietary journal. This assessment takes into account the international standards for a balanced and sustainable diet.

Classroom practices

During the classroom practices sessions, the presentation and defence of the projects carried out during the semester will be carried out.

Seminars

1. Introduce the objectives of the research project
2. Practical cases of epidemiology designs
3. How to present a research paper? Expert meeting of the research project

Methodology

The development of the training activities of the course is based on: theory classes, seminars, classroom practices and laboratory and computer practices, each of them with its specific methodology. Likewise, a series of activities are proposed that will allow the student to take an active role in the teaching-learning process.

Classes of theory: The student acquires the scientific knowledge of the subject by attending theory classes. These are classes with TIC-TAC support in which the teacher exposes the subject but also asks for the participation of the student. Likewise, activities prior to the sessions are proposed that allow the student to intervene more actively in the teaching-learning process. The audio-visual material used in class can be found by the student in the Moodle space of the subject.

Classes of practices and seminars: The knowledge acquired in theory classes and in personal study are applied to the resolution of practical cases. Students work in small groups allowing them to acquire the ability to work in groups and to analysis and synthesis. It also allows to apply statistical resources in the interpretation of data. The student will be able to access the practice guides through the Moodle space. The practical classes are directed to support the development of the demography and epidemiology project (work by group project) and the Balanced and sustainable diet work (individual work).

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.

Activities

| Title | Hours | ECTS | Learning Outcomes |
|---------------------|-------|------|--|
| Type: Directed | | | |
| Classroom practices | 5 | 0.2 | 6, 12, 23, 22, 20, 21, 7 |
| Computer practices | 18 | 0.72 | 9, 5, 3, 2, 4, 1, 6, 10, 12, 13, 14, 15, 16, 19, 17, 18, 24, 23, 22, 20, 21, 11, 7, 25 |
| Seminars | 3 | 0.12 | 12, 7 |

| | | | |
|--|----|------|--|
| Theory classes | 26 | 1.04 | 5, 3, 2, 4, 10, 12, 13, 14, 15, 16, 11 |
| Type: Supervised | | | |
| Tutorship (individual or group) | 4 | 0.16 | |
| Type: Autonomous | | | |
| Balanced and sustainable diet work | 14 | 0.56 | 12, 24, 23, 20, 21, 7 |
| Individual study | 34 | 1.36 | 3, 2, 10, 12, 13, 14, 15, 16, 11, 7 |
| Preparation of some theoretical content and seminars of the course | 6 | 0.24 | 4, 12, 22, 20, 21 |
| Research project on demography and epidemiology | 40 | 1.6 | 9, 5, 3, 2, 4, 1, 6, 10, 12, 13, 14, 15, 16, 19, 17, 18, 24, 23, 22, 20, 21, 11, 7 |

Assessment

CONTINUOUS ASSESSMENT

For the evaluation of the subject, a continuous assessment model will be followed. The participation of the student, the preparation and presentation of the research or ApS project, the work of balanced and sustainable diet and the grade of the summative evaluation will be taken into account, in the following proportions:

- Final summary evaluation: 35%
- Research or ApS project on demography and epidemiology (group): 40%
- Balanced and sustainable diet work (individual): 15%
- Participation in face-to-face and virtual learning activities: 10%

For the evaluation of the subject a model of continuous evaluation will be followed; in the development of all the activities, including those of theoretical typology, the involvement of the student will be asked to prepare some concepts and to perform different activities that will facilitate the learning process.

In the case of the group project, the process of preparing it throughout the semester, the periodic deliveries and the tutorials will be taken into account. The final result will also be assessed in terms of the quality of the information used, the presentation and defence as well as the self-assessment and co-assessment of the group members.

The group project (both digital support and oral presentation and defence) can be done in Catalan, Spanish or English. Students who use the English language will have a bonus in the final grade of the research project of up to 1 point. All the evaluation of the project will be done with the use of rubrics that will be made available to students at the beginning of the course.

A final summative evaluation will be carried out after all the activities of the subject in which students are required to have a minimum grade of 4 to be able to pass the subject. This evaluation will be an objective test-type.

Recovery: if needed, the mark of the project and the summative evaluation can be recovered. To participate in the recovery, the students must have been previously evaluated in a set of activities whose weight equals to a minimum of two thirds of the total grade of the subject. Therefore, the students will obtain the "Not Evaluable" rating when the evaluation activities carried out have a weighting of less than 67%.

The grade of the summary evaluation can be raised, in this case, the classification that will be considered will be the last one, regardless of whether it is superior or inferior to that obtained previously.

The weighted average mark of the different evaluable parts detailed before must be equal or superior to 5.0.

SINGLE ASSESSMENT

This subject considers the single evaluation system, with attendance at practicals and classroom practices being compulsory. In this sense, the unique assessment consists of carrying out the following activities:

1) Written test that includes the entire program of the subject. This test will consist of test-type and written questions, in which the resolution of some problems is included. This test represents 50% of the final grade and a minimum grade of 4 is required to pass the subject. It will take place on the day of the summative assessment of the subject.

2) Research project or ApS: in the case of a single assessment, the subject project will be developed individually and periodic submissions are not required. During the course of the semester, students who take single assessment will be able to set up tutorials with the teaching staff if they need it. The final delivery of the project will be made in written format following the scientific work model, on the same day as the summative assessment of the subject is scheduled. The project represents 35% of the subject grade.

3) Work on a balanced and sustainable diet: it is carried out individually following the same instructions as presented in the continuous assessment section. It will be delivered on the sameday that the summative assessment of the subject is scheduled and represents 15% of the subject grade.

Recovery: in case of need, you can recover the grade of the project and the written test, on the same day that the recovery exam for the subject is scheduled.

Assessment Activities

| Title | Weighting | Hours | ECTS | Learning Outcomes |
|---|-----------|-------|------|---|
| Balanced and sustainable diet work (individual) | 15% | 0 | 0 | 3, 2, 6, 12, 13, 16, 24, 23, 22, 20, 21, 7 |
| Final summative evaluation | 35% | 0 | 0 | 3, 2, 4, 10, 12, 13, 14, 15, 16, 24, 23, 22, 20, 21, 11, 7 |
| Participation in face-to-face and virtual learning activities | 10% | 0 | 0 | 3, 2, 6, 10, 12, 13, 14, 15, 16, 24, 11, 7 |
| Project on demography and epidemiology (group) | 40% | 0 | 0 | 9, 5, 4, 1, 6, 10, 12, 13, 14, 15, 19, 17, 18, 24, 23, 22, 20, 21, 11, 7, 8, 25 |

Bibliography

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SPECIFIC BIBLIOGRAPHY, WEBSITES AND VIDEOS

Given during the development of each topic.

Software

Jamovi Stats. Open. Now. (<https://www.jamovi.org/>)

MapChart (<https://mapchart.net/>)

CESNID

ALIMENTADOR

Access

Excel

Power-Point

Word