

Degree	Type	Year
Genetics	OT	4

Contact

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Teachers

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Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

There are no official prerequisites, but it is assumed that the student has previously acquired enough solid knowledge on subjects like Genetics and Human biology

Objectives and Contextualisation

The course of forensic anthropology is designed to provide students the basic tools to manage biological information about personal identification. It is based on the application of knowledge of physical anthropology and human biology to medical and legal aspects, basically identification. We work at morphological, osteological, biochemical and molecular level. The work identifying both individual and collective lives of individuals, as the recent and ancient corpses. The emphasis in both forensic application, as in the reconstruction of ancient populations.

In this regard the course aims to:

- Understanding human variability as a source of individualization
- To know the morphological variability of characters distinctive of human groups
- To understand and interpret biochemical and molecular variability
- To analyse the biological basis of human diversity by different identification techniques
- To understand the taphonomical effects to interpret forensic situations
- To know the statistical basis of identifications

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Apply knowledge of theory to practice.
- Be able to analyse and synthesise.
- Be able to communicate effectively, orally and in writing.
- Define mutation and its types, and determine the levels of genic, chromosomal and genomic damage in the hereditary material of any species, both spontaneous and induced, and evaluate the consequences.
- Describe and interpret the principles of the transmission of genetic information across generations.
- Describe the organisation, evolution, inter-individual variation and expression of the human genome.
- Design and interpret studies associating genetic polymorphisms and phenotypical characters to identify genetic variants that affect the phenotype, including those associated to pathologies and those that confer susceptibility to human illnesses or those of other species of interest.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Make decisions.
- Measure and interpret the genetic variation in and between populations from a clinical, conservational and evolutionary perspective, and from that of the genetic improvement of animals and plants.
- Reason critically.
- 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.
- Use and interpret data sources on the genomes and macromolecules of any species and understand the basics of bioinformatics analysis to establish the corresponding relations between structure, function and evolution.
- Use and manage bibliographic information or computer or Internet resources in the field of study, in one's own languages and in English.

Learning Outcomes

1. Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
2. Apply knowledge of theory to practice.
3. Be able to analyse and synthesise.
4. Be able to communicate effectively, orally and in writing.
5. Describe the role of genetic variation in the human species in the diagnoses, prevention and treatment of illnesses.
6. Describe the structure and variation of the human genome from a functional, clinical and evolutionary perspective.
7. Determine the genetic basis and calculate the risk of recurrence of human illnesses.
8. Enumerate and describe the different techniques for analysing DNA polymorphisms that can be applied to studies of genetic variation associated to human pathologies.
9. Evaluate and interpret genetic variation in human populations and from a clinical and evolutionary perspective.
10. Interpret the results obtained using techniques for the analysis of DNA polymorphisms to identify and evaluate factors of susceptibility and propensity to suffer illnesses.
11. Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
12. Make decisions.
13. Reason critically.
14. Recognise genic, chromosomal and genomic anomalies in humans and evaluate the clinical consequences.

15. Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
16. Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
17. Use and manage bibliographic information or computer or Internet resources in the field of study, in one's own languages and in English.
18. Use data sources on the human genome and interpret them.

Content

- Legal framework of forensic anthropological studies
- Identification of living people and recent corpses
- Decay and conservation
- Taphonomy
- Field anthropology
- Identification from human remains
- Forensic anthropology in major catastrophes

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Laboratory practices	9	0.36	2, 9, 12, 13, 3, 18
Seminars	2	0.08	6, 8, 13, 4, 3, 17, 18
Theoretical classes	15	0.6	8, 10, 13, 3, 18
Type: Supervised			
Group work	8	0.32	2, 9, 5, 12, 13, 4, 3, 17
Individual work	2	0.08	
Type: Autonomous			
Group work	12	0.48	9, 12, 13, 3
Individual work	25	1	9, 5, 10, 13, 3, 17, 18

The nucleus of the learning process is the work of the student. The student learns working, being the mission of the teaching staff to help him/her in this task by providing information, or showing them the sources where they can achieve the most recent and efficient information. In line with these ideas and in accordance with the

objectives of the subject, the development of the course is based on the following activities:

Theoretical teaching: The student acquires the scientific and technical knowledge of the course, attending the theoretical classes and complementing them with the personal study of the topics explained. The theoretical classes are conceived as a method of transmitting the teacher's knowledge to the student. However, an important part of the discussion of topics will be proposed or subjects developed using a methodology of Problem-based learning. Whenever possible, students will work in small groups. With enough anticipation, the student will know the topics to debate and discuss on the virtual forums. The audiovisual material used in class will be provided by the teacher through a virtual campus.

Seminars: seminars will focus on specific topics of theory. The students will work in small groups allowing them to acquire the ability to work in groups and also to analyze and do synthesis.

Practices: The topics related to osteology and diagnoses will be mainly taught in theoretical-practical classes with small groups of students in the laboratory. They are designed to learn osteology and its variability, and are complemented by theoretical information. Students will have a detailed work guidebook. In order to achieve good performance and acquire the corresponding competencies, a comprehensive reading of the proposed practice is essential before its completion. The follow-up of the practical class will also involve the individual collection of the results in a dossier of activities. To be able to attend the practical classes it is necessary for the student to justify having passed the biosafety and security tests that he will find in the Virtual Campus and be knowledgeable and accept the rules of operation of the laboratories of the Faculty of Biosciences.

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	Weighting	Hours	ECTS	Learning Outcomes
Group work	20%	0	0	16, 15, 5, 12, 13, 4, 3, 17
Participation and work on practices	30%	0	0	1, 15, 2, 9, 6, 7, 10, 12, 18
written test	50%	2	0.08	9, 7, 8, 10, 11, 12, 13, 14, 3, 18

Continuous Assessment

As this is a continuous assessment, the student's participation, seminar preparation, practical materials, and test score will be taken into account. The final result will be the weighted sum of each component.

A written exam will be conducted to assess the theoretical content of the course (50%), including content covered in the practical sessions. A minimum score of 4 is required on this exam for it to be included in the final grade. This exam can be retaken during the resit period.

Practical sessions account for 30% of the final grade. The assessment will consider both the students' attitude and the work carried out in the lab, as well as the required reports. Attendance at practical sessions is mandatory and a requirement to pass the course. Students will receive a "Not Assessable" grade if their absence exceeds 20% of the scheduled sessions.

The seminar will be used to discuss group work and will account for 20% of the final grade. All students in the same group will receive the same grade for this component, adjusted based on individual contributions to the work.

To pass the course, the final grade must be equal to or greater than 5.

A student will be considered "Not Assessable" if they have completed less than 50% of the assessment activities.

Single Assessment

The single assessment consists of a single synthesis exam that will evaluate the content of the entire theoretical program of the course. The grade obtained in this synthesis exam will account for 50% of the final grade. The single assessment exam will take place on the same date scheduled for the continuous assessment exam, and the same resit system will apply.

The evaluation of the practical and seminar activities will follow the same process as in the continuous assessment. The grade obtained will account for 50% of the final grade. Students opting for the single assessment may submit all required evidence (practical report and seminar work) on the same day as the synthesis exam. The seminar work may be completed individually. The same resit system and "Not Assessable" criteria as in the continuous assessment will apply.

Artificial Intelligence (AI)

Permitted use: "In this course, 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 from the student in terms of analysis and personal reflection. The student must clearly identify which parts were generated using this technology, specify the tools used, and include a critical reflection on how these influenced the process and final outcome of the activity. Lack of transparency in the use of AI will be considered academic dishonesty and may result in a penalty in the activity grade or more severe sanctions in serious cases."

Bibliography

Basic literature:

WHITE T, BLACK MT & FOLKENS PA. Human Osteology.- Academic Press (diverses edicions)

LANGLEY, NR AND TERSIGNI-TARRANT MT. (2017) Forensic Anthropology: a comprehensive introducción (2n ed). CRC Press

HAGLUND SD & SORG MH. (1997) Forensic Taphonomy: the postmortem fate of Human Remains. CRC Press

JOBLING, M.A. i HURLES, M.E. (2004). Human Evolutionary Genetics - origin, peoples & disease. Garland Science. Cap. 15

WEINER MP, GABRIEL SB & STEPHENS JC. (2007) - Genetic variation. A laboratory manual. Cold Spring Harbor. Cap.34

OBERTOVA Z, STEWART A, CATTANEO C (2020).- Statistics and probability in Forensic Anthropology.- Elsevier

Specific literature

It will be given during the course.

Software

no aplica

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
(PLAB) Practical laboratories	141	Catalan	second semester	afternoon
(PLAB) Practical laboratories	142	Catalan	second semester	afternoon
(PLAB) Practical laboratories	143	Catalan/Spanish	second semester	afternoon
(PLAB) Practical laboratories	144	Catalan/Spanish	second semester	afternoon
(SEM) Seminars	141	Catalan	second semester	morning-mixed
(SEM) Seminars	142	Catalan	second semester	morning-mixed
(TE) Theory	14	Catalan	second semester	morning-mixed