Universitat Autònoma de Barcelona

2022/2023

Forensic Anthropology

Code: 105063
ECTS Credits: 3

Degree	Type	Year	Semester
2500890 Genetics	OT	4	2

Errata

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Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Other comments on languages

The content of the different subjects will be explained by using audiovisual materials. The main literature and ppts will be in English

Teachers

Dominika Nociarova

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

- Forensic entomology

- Field anthropology

- Identification from human remains

- Forensic anthropology in major catastrophes

- Biochemical and molecular applications in identification and determination of paternity

*Unless the requirements enforced by the health authorities demand a prioritization or reduction of these contents.

Methodology

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 an 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.

Activities

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

Assessment

As it is a continuous assessment, the participation of the student, the group work, the preparation of the seminars, the documents from the practical sessions and the note of the control will be taken into account. The final result will be the weighted sum of each of the parts.

-A written test will be carried out to evaluate the theoretical part of the subject (50%).

- The laboratory sessions represent 25% of the final mark. The assessment will take into account the attitude of the students as well as the work done in the laboratory and the questionnaires required. Attendance to practical sessions is mandatory. Students missing more than 20% of programmed sessions will be graded as "No Avaluable"

-The seminar will be used to discuss the workgroup and corresponds to 20% of the final mark. All students in the same group will have the same grade in this test, qualified by the individual work developed in the group.

- 5% of the final mark comes from the involvement and participation of the student in the subject through the student manner and activities e.g. in the virtual campus forum, etc.

To be eligible for the retake process, the student should have been previously evaluated in a set of activities equaling at least two-thirds of the final score of the course or module. Thus, the student will be graded as "No Avaluable" if the weight in of all conducted evaluation activities is less than 67% of the final score

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes

Group work	25%	0	0	16, 15, 5, 12, 13, 4, 3, 17
Participation and work on practices	25%	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

Bibliography

Basic literature:

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

LANGLEY, NR AND TERSIGNI-TARRANT MT. (2017) Forensic Antrhopology: 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