



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze della Terra e del Mare
ACADEMIC YEAR	2022/2023
MASTER'S DEGREE (MSC)	NATURAL SCIENCES
SUBJECT	HUMAN BIOLOGY AND BIODIVERSITY
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50512-Discipline biologiche
CODE	22414
SCIENTIFIC SECTOR(S)	BIO/08
HEAD PROFESSOR(S)	DUMAS FRANCESCA Ricercatore Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	94
COURSE ACTIVITY (Hrs)	56
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	DUMAS FRANCESCA Wednesday 11:00 - 12:00 via Archirafi 18, studio piano terra.

DOCENTE: Prof.ssa FRANCESCA DUMAS

PREREQUISITES	To understand the course the student must have knowledge of systematic zoology and ecology; the concepts of formal and population genetics, as well as comparative anatomy, geology stratigraphic and general paleontology. The course aims to train a evolutionary anthropologist with solid anatomical, genetic and human knowledge general biology.
LEARNING OUTCOMES	The course offers a specialized preparation in the field of human evolution and non-human primates, in full consistency with the footprint holistic and naturalistic of the route. Ability to apply knowledge e understanding: acquiring knowledge and skills for using advanced tools in the field of anthropological studies. Autonomy of judgment: the learner must be able to evaluate the implications of professional knowledge and research. Communication skills: the ability to explain critically and clearly, using a appropriate scientific terminology, study results. Learning skills: ability to update through the consultation of the scientific publications of the sector. Capacity of acquire knowledge using teaching and learning tools provided during the course of study. The laboratory hours will serve to the acquisition of ability to manage tools and technologies useful in the profession of the naturalist and more specifically of the anthropologist. In particular information will be provided on the use of: optical light microscope transmitted and direct, fluorescence microscope, electrophoresis, PCR
ASSESSMENT METHODS	the course includes an evaluation in the form of a final oral exam possibly preceded by one or more ongoing oral and / or written tests, agree with the learners. Written tests, if agreed with the learners, they will consist of 30 multiple choice and open choice tests. Any ongoing tests will be evaluated out of thirty. The laboratories will be evaluated by practical tests on the topics covered. During the final oral exam of the Course the theoretical and practical knowledge of the learner and his ability will be assessed criticism on the topics of anthropology, genetics of man and gods non-human primates. As regards the verification, the learner must demonstrate that he has autonomy judgment on the discipline, understand the evolutionary implications and phylogenetics of the same, evaluate the importance of knowledge and theirs applicability in the professional field. The mark in the various tests will be the result of the critical evaluation of the specific preparation and the ability to explain and reasoned synthesis arguments. The vote of 18/30 will be attributed to the test minimally enough. From 19th to 22nd the vote will be indicative of poor preparation; a vote from 23 to 25 will indicate a fair test; grades from 27 to 29 they will indicate a good test; the optimal test will be evaluated with the full marks and, if the learner has demonstrated great ability to synthesis and critical capacity it will be commended with the attribution of the lodum.
EDUCATIONAL OBJECTIVES	Students will be able to analyze the macro and micro evolutionary differences of our species; they will be able to understand processes that have generated current human biodiversity both at morphological and genetic levels; in particular they will analyse the phenotypic variability and human genetics, analyze the biodiversity of human populations in evolutionary and adaptative perspective, analyze the variability intra and inter-populations.
TEACHING METHODS	the course consists of 6 credits (5 + 1) of which 5 (each of 8 hours) of lectures and 1 of laboratory or exercises (12 hours) for a total of 52 hours (40h + 12h).
SUGGESTED BIBLIOGRAPHY	textbooks: Jobling- Human evolutionary Genetics, Garland science Spedini-Antropologia evolucionistica, Piccin Relethford-Genetica delle popolazioni umane- Casa Editrice Ambrosiana Caramelli David-Antropologia molecolare-Manuale di base, Firenze University press

SYLLABUS

Hrs	Frontal teaching
4	Biological Anthropology: introduction on Homo forms and relationships with non-human primates
6	Anthropological characteristics: quantitative and qualitative, examples. Humanity and falsification of the race concept
6	The study of the origin and evolution of Homo sapiens on the base of the molecular approach; the advent of agriculture and the genomic pool of Europeans.

SYLLABUS

Hrs	Frontal teaching
8	Genetics variability and population genetics studies; the factors influencing the genetics and genomics variability: classical and molecular polymorphisms
6	Human adaptability, plasticity and acclimatization; environment and nutrition; environment and diseases
6	Paleogenetics: the study of ancient DNA; H. neanderthalensis and denisova
4	Biodemography, the study of names and Y chromosome

Hrs	Workshops
6	Genomics variability: using "genomic browser "; analysis of literature in English
6	Lab. activities: comparative genomics: classic and Molecular cytogenetics-Hybridization in situ and microscopic analysis; PCR and analysis of human polymorphisms by electrophoresis.