



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2022/2023		
MASTER'S DEGREE (MSC)	BIODIVERSITY AND ENVIRONMENTAL BIOLOGY		
SUBJECT	BIOLOGICAL AND MOLECULAR ANTHROPOLOGY		
TYPE OF EDUCATIONAL ACTIVITY	D		
AMBIT	20490-A scelta dello studente		
CODE	19788		
SCIENTIFIC SECTOR(S)	BIO/08		
HEAD PROFESSOR(S)	SINEO LUCA	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	6		
INDIVIDUAL STUDY (Hrs)	102		
COURSE ACTIVITY (Hrs)	48		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	SINEO LUCA Thursday 12:00 14:00 Studio - Via Archirafi 18 - Dip. STEBICEF - Biologia animale e Antropologia		

DOCENTE: Prof. LUCA SINEO

PREREQUISITES	For an adequate understanding of the course it is necessary to possess the fundamentals of biological and natural sciences and in particular of formal genetics and evolutionary biology. A basic knowledge of the methodologies of study and evaluation of ancient chronological horizons will be particularly useful.
LEARNING OUTCOMES	Knowledge and understanding. Knowledge of basic evolutionary phenomena; knowledge of basic paleoecological phenomena; knowledge of the molecular mechanisms underlying the evolution of genomes. Applying knowledge and understanding. Ability to perform analysis and models for the study of the evolution of the Homo genus with particular regard to H. sapiens. Making judgements. Ability to understand the scientific importance of the analysis of endogenous and exogenous processes and of the evolution of the forms and molecules and their environmental and social impact. Communication skills. The student will acquire the ability to compare and pass on his knowledge and skills in the analysis of the processes that have affected and will affect the genus Homo and the environment he modified. Learning skills. Through the attendance to lectures and exercises the student will develop his / her own learning and analysis skills of the processes with a comparative perspective with the other disciplines of the course of study.
ASSESSMENT METHODS	The exam is oral . The test evaluates the ability to correct expression and processing of basic concepts of the discipline and of the learner's capacity for critical analysis . The score will be the result of the critical evaluation of the specific preparation and the ability to exhibit a reasoned synthesis of the arguments. The 18/30 vote will be attributed to the least sufficient evidence. From 19 to 22 the vote will be indicative of poor preparation; a vote from 23 to 26 will be an index of discrete evidence; The votes from 27 to 29 will be a good test; the excellent test will be evaluated with the highest marks and, if the learner has demonstrated great ability to synthesize and criticize it, it will be commended with the attribution of the laudem. The exam is oral and therefore there is no minimum number of questions.
EDUCATIONAL OBJECTIVES	The student learns the biological origin of man and cultural foundations. The course provides the input for the understanding of biological and genetic evolution and distribution of Homo sapiens. Making inference from diversity (measures of molecular diversity, neutrality test, mismatch distribution, phylogenetic trees). Ancient DNA problems and perspectives.
TEACHING METHODS	The course is organized in 48 hours of lectures which include practical lessons of phylogenetic analysis on computer packages.
SUGGESTED BIBLIOGRAPHY	Jobling M.A., Hurler M.E., Tyler-Smith C., Human evolutionary genetics, Garland Science, 2014 - SECONDA EDIZIONE! ISBN: 978-0-8153-4148-2 Material and tools will be provided as an integration to the information given during the lectures Scientific articles, reference and tools will be provided weekly during the course.

SYLLABUS

Hrs	Frontal teaching
4	Biogeography, Systematics and Evolution of living primates
6	The evolution of Anatomically modern Homo sapiens, theories and models. Evolution of morphology; bipedalism and vestibular system; Mirror Neurons System and Extended Mind Theory.
20	Molecular Anthropology. Studies of Haplotypes and Uniparental markers. Human Genetic and genomic Variability. Study of genetic and genomic variability in Homo. normal and pathological variants. Examples of balanced polymorphism. Molecular applications to the study of human variability: genetic codification of human phenotypes. Human Genomics; Human Genetics; Comparative cytogenetics.
10	Molecular applications in human phylogeny. Several examples of genomics in Homo. From Brain evolution to the evolution of the human reproductive system. The genomes of H. neanderthalensis and H. spp. Denisova. Molecular applications to human Biology and Ecology and to the study of human migrations. Examples of geographic analysis projects.
8	Exercises of population genetics with special attention to normal and pathological human genetics. Practical lessons on genome analysis using specific software. Microscopy and histology on human tissues.