



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali
ACADEMIC YEAR	2019/2020
BACHELOR'S DEGREE (BSC)	AGRICULTURAL SCIENCES AND TECHNOLOGIES
SUBJECT	ZOOLOGICAL TAXONOMY AND DEMOGRAPHY LABORATORY
TYPE OF EDUCATIONAL ACTIVITY	F
AMBIT	10861-Altre conoscenze utili per l'inserimento nel mondo del lavoro
CODE	18714
SCIENTIFIC SECTOR(S)	
HEAD PROFESSOR(S)	MANACHINI BARBARA Professore Associato Univ. di PALERMO ROSY INES
OTHER PROFESSOR(S)	
CREDITS	3
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Pass/Fail
TEACHER OFFICE HOURS	MANACHINI BARBARA ROSY INES Tuesday 10:00 11:30 Viale delle Scienze, 13. Edificio 5A, stanza 004 Thursday 10:00 11:30 Ricevimento studenti polo Trapani c/o la sede del polo di Trapani, Via del principe di Napoli e on line su richiesta.

DOCENTE: Prof.ssa BARBARA ROSY INES MANACHINI

PREREQUISITES	Knowledge of basic biology
LEARNING OUTCOMES	<p>Knowledge: The course aims at the acquisition of basic and methodological knowledge in relation to the taxonomy and demography of animals.</p> <p>Understanding: Understanding of the tools for the classification and study of population dynamics.</p> <p>Applying knowledge and understanding: Ability to recognize animal species through the use of specific systematic keys. Ability to understand the relationships between species and environment. Ability to use autonomously the acquired knowledge to the application of proper management of agro-ecosystems.</p> <p>Making judgements: Ability to recognize taxonomic entities and to assess their level of impact on the environment, with particular reference to agrarian context.</p> <p>Communication skills: Ability to present with clearness and propriety of language the skills acquired and ability to disseminate them using exact definitions and concepts. Ability to communicate their knowledge even to non-experts and sustaining the importance of proper environmental management and maintenance of biodiversity.</p> <p>Learning skills: Ability to update their knowledge autonomously through the finding of scientific publications of the zoological field and the deepening of the topic. Ability to develop and apply theoretical aspects of the scientific research in the field of the systematic and applied zoology. Ability to keep up with scientific knowledge and autonomously subsequent studies in the field of zoological systematic and applied demography.</p>
ASSESSMENT METHODS	<p>Written test Number of tests: one Aim of test: - Ensure the acquisition of skills, capacity and expertise within applied zoology - Check the ability to establish connections between the course contents - Check the comprehension of applications of the contents and the ability to place them within the professional and technological context of reference</p> <p>Test type: Structured test, an articulated series of closed stimuli (true / false, matching, multiple choice and completion) and semi-structured test, closed stimulus with the possibility for students to develop autonomously the answer (short essay). Test time: 3 hours Minimum number of questions: 20 Conclusive measurement of the test and its criteria: in structured tests a score will be assigned to each question depending on whether the answer is correct, incorrect or omitted, in semi-structured tests scoring stairs will be adopted in reference to an established model of correct response for the comparability of student performance. The suitability is achieved when the student shows knowledge and understanding of the issues at least in broad outline, and he has minimal application skills in order to solve concrete cases. Evaluation: Verification of the suitability</p>
EDUCATIONAL OBJECTIVES	<p>The course aims to provide the main taxonomic knowledge about the different zoological phyla, evolutive dynamics that led to the present fauna and classification of animal species. Also it aims to provide the tools necessary for the study of the demography of animal populations through the knowledge of the methods of survey and analysis of their dynamics, with particular reference to species of agricultural interest. Objectives of the laboratory are: reinforce the knowledge gained during the frontal lessons through the observation of some taxa and their recognition; acquire the methods of sampling and observation of animal populations; acquire the main methods of preparation and conservation of some zoological species; understand the importance of implementing an integrated management of agro-ecosystems compatible with safeguarding of biodiversity.</p>
TEACHING METHODS	Lessons, laboratory
SUGGESTED BIBLIOGRAPHY	<p>- Hickman et al., Diversita' animale (15a Ed.). McGraw-Hill - Chelazzi G. e Santini G., Ecologia. Ed. Giunti Altri testi utili - Fondamenti di Zoologia Hickman et al, (15a Ed.). McGraw-Hill. - AA.VV. Zoologia. Ed. Idelson-Gnocchi. - AA.VV. Zoologia – Parte Sistematica. Ed. Idelson-Gnocchi</p>

SYLLABUS

Hrs	Frontal teaching
1	Presentation of the course and general concepts. Living organisms and their environment. Outline of ecology: the biosphere, ecosystems, food chains.
3	Classification and phylogeny. Phylogenetic trees. Taxonomy concepts and methods of classical, cladistics and fenetico-numeric classification. Linnaeus and the Systema Naturae. The binomial nomenclature. Concept of systematic level and taxon. Dichotomous keys
2	Concept of species, subspecies and populations. Evolution and speciation. Theories and scientific grounds of evolution. Darwin's theory. Reproductive isolation barriers. Natural selection and genetic drift.
4	Taxonomic groups and their main features. Protozoa. Porifera. Cnidaria. Ctenophora. Platyhelminthes. Rotifera. Nematoda. Molluscs. Annelids. Arthropods. Chordata.
2	Populations: parameters, growth curves, limitation and regulation factors. R and k strategy species. Population dynamics.
2	Monitoring methods and sampling of populations. Sampling techniques and study of field populations. Importance of observation, mode of collection and value of the notes.
Hrs	Workshops
2	Insights on the last universal common ancestor (L.U.C.A.) and the onset of Darwinian evolution.
2	Insights on Taxa of agricultural interest in particular on Nematodes and Arthropods.
2	Description of phytophagous and entomophagous species by observation of insect storage boxes.
3	Observation and identification of animal organisms through museum and zoological garden visits.
3	Observation of attractive devices and their action modality in relation to arthropods. Entomological collection and preparations. Microscopic preparations
2	Implementation of a representative sampling of the field in relation to phytophagous species and compilation of survey forms to detect population levels.
2	Processing of data collected in the sampling and assessment of population thresholds based on bibliographic data.