UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Psicologiche, Pedagogiche, dell'Esercizio Fisico e della Formazione
ACADEMIC YEAR	2019/2020
MASTER'S DEGREE (MSC)	PRIMARY EDUCATION
SUBJECT	ZOOLOGY FOR PRIMARY AND CHILDREN SCHOOL WITH WORKSHOP
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	70009-Discipline biologiche ed ecologiche
CODE	17155
SCIENTIFIC SECTOR(S)	BIO/05
HEAD PROFESSOR(S)	PARRINELLO DANIELA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	7
INDIVIDUAL STUDY (Hrs)	119
COURSE ACTIVITY (Hrs)	56
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	3
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**PARRINELLO DANIELA** Monday 09:30 11:30 Dipartimento di Scienze della Terra e del Mare (DiSTeM) Ed. 16 Viale delle Scienze piano seminterrato -1.Si prega di prenotarsi al ricevimento tramite mail daniela.parrinello@unipa.it Thursday 09:30 11:30 Dipartimento di Scienze della Terra e del Mare (DiSTeM) Ed. 16 Viale delle Scienze piano seminterrato -1.Si prega di prenotarsi al ricevimento tramite mail daniela.parrinello@unipa.it

DOCENTE: Prof.ssa DANIELA PARRINELLO- *Lettere A-L*

PREREQUISITES	Basic biology knowledge, according to the programs of the secondary school
LEARNING OUTCOMES	Knowledge and ability to understand: Knowledge of zoology to provide a solid knowledge on which the teacher can develop and build educational paths consistent with the kindergarten and elementary school. That involves the skills required on the levels of animal organization, their interactions with the environment and evolution. Learning is achieved through the study of the basic mechanisms and their decisive significance in the charcter inheritance that affect the main functions of organs and systems. In this context, it is pivotal the study of the main phyla and related taxa examined through some model species. The methods of study and the specific language of the discipline will be attained. The knowledge, supplemented by teaching expertise on the fundamental animal biology, will perform the capacity to prepare and plan training goals. The tools for implementing education experiences will be gained. Capacity to apply knowledge and understanding The achieved knowledge enables the understanding of the educational and educational value of animal biology in a social context that more and more requires the conscious knowledge of the biological phenomena and their applications. Making judgments The theoretical knowledge and laboratory expertise must lead to the achievement of capacity of analysis and synthesis for the interaction with other disciplines and the formation of an ethical thought. Enable communication The achieved specific technical language and ability will allow to expose and transpose knowledge on animal biodiversity and nature conservation principles, stimulating and developing the skills analysis. The pedagogical importance of the animal world and the scientific method will be magnified highlighting the educational aspects. Capacity Learning Stand-alone update by consulting the journals and media tools on animal sciences field. The knowledge gained during the course will allow to attend workshops and specialized seminaries on teaching by using animal biology as an educational tool. Finally, the access to Masters will be allowed.
ASSESSMENT METHODS	Written test (multiple choice, true / false) and possible interwiew. The test tends to verify the skills and knowledge relating to the field specification of the course (score on thirty), in addition the evaluation will take into account (weighted average) the results achieved in the final laboratory test (score on thirty).The written test consists of 20 questions, each of which is accompanied by two or more closed answers. The skills and knowledge are estimated through the choice of / the exact answers chosen among those offered to every question. The closure of the response will allow the examiner to determine in advance the score to be assigned to each question depending on the answer: correct, wrong or omitted. Every correct answer is evaluated with a score of 1.50; that wrong with the score -0.50; failure to reply with a score of 0. Duration of test: 60 minutes. The final grade will be the average between the written essay and the score awarded following the evaluation by the Tutor who co-led the laboratory according to the subject content of the experimental project on teaching methodologies for the primary school and kindergarten. The interview may be requested by the teacher for eventual verification of the results of the written test, such a verification will concern: 1) the correctness of the procedure used to resolve the question; 2) the adequacy of the proposed solution in relation to the acquired skills. The test will be exeeded if requirements 1 and 2 will be met. The interview, may also be requested by the student who has achieved the score of 20/30. In any case, the evaluation of the interview replaces that achieved with the written test EVALUATION CRITERIA 18/23 the student must demonstrate a basic achievement of the objectives, namely the acquisition of a basic knowledge of the topics argued and the ability to operate minimal links, and to expose them with a basic linguistic-communicative skills. 24/26 the student must demonstrate a good achievement of the objectives, namely the acquisition of a robust knowledge of the topics argued and the ability to operate well-briged links, and to expose them with good linguistic-communicative skills. 27/29 the student must demonstrate to have surely achieved objectives: full knowledge of subjects, reflexive mastery, significant expressive skills. 30/30 cum laude, the student must demonstrate to have achieved excellent objectives: full knowledge of subjects, critical mastery, ability to transfer acquired skills, linguistic-communicative skill, both general and specific, absolutely pertinent and definitely noteworthy; creativity and originality.
EDUCATIONAL OBJECTIVES	OBJECTIVES The main objective is to know how to make use of the skills gained in the field of zoology to complete the teaching ability related to Science and scientific methodologies. In particular: elicit attitudes and curiosity stimulating the search for explanations of biological phenomena; explore these

	phoenomena by using a scientific approach developing autonomous capacity to formulate questions and hypotheses; detect similarities and differences through the application of qualitative and quantitative methods relevant the educational level required. The course aims to provide the student with the main founding mechanisms that regulate the main activities, and highlight the complexity of the animal systems at various levels of observation.The tools for the Didactics of Biology are provided.
TEACHING METHODS	Lessons (6 cfu) and laboratory expertise (1 cfu)
SUGGESTED BIBLIOGRAPHY	Solomon-Berg-Martin –Fondamenti di Biologia- EdiSES III edizione (numero di pagine 270) De Bernardi et al. –Zoologia parte generale- IDELSON-GNOCCHI (numero di pag. 180) CD-ROM a cura del docente

SYLLABUS

Hrs	Frontal teaching
8	Presentation of the didactic objectives of the course. The animal cell: structure and functions
6	Chromosomes: structure and function. The cell cycle, mitosis, meiosis
5	Basics of genetic
1	Unicellular eukaryotes: Protozoans
8	Morpho-functional levels in the increasing complexity of invertebrates and vertebrates
4	Asexual and sexual reproduction, gametogenesis, models of embryonic and post-embryonic development of invertebrates and vertebrates
3	Classification and relationships. Genesis of biodiversity.
5	The fundamentals of animal systematic (invertebrates and vertebrates)
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Hrs	Workshops
8	Exploring invertebrate models
8	Didactic applications of animal models as educational tools. Production of didactic units.
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