UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	BIOLOGICAL SCIENCES
SUBJECT	COMPARATIVE ANATOMY
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50026-Discipline botaniche, zoologiche, ecologiche
CODE	16270
SCIENTIFIC SECTOR(S)	BIO/06
HEAD PROFESSOR(S)	VAZZANA MIRELLA Professore Ordinario Univ. di PALERMO GERACI FABIANA Professore Associato 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	**GERACI FABIANA** Monday 15:00 16:00 Studio docente. Ricevimento da fissare previo contatto per mail. **VAZZANA MIRELLA** Monday 14:00 16:00 Via Archirafi, 18 Wednesday 14:00 16:00 Via Archirafi, 18 Friday 14:00 16:00 Via Archirafi, 18

DOCENTE: Prof.ssa FABIANA GERACI- *Lettere L-Z*

PREREQUISITES	No specific prerequisites, but it is recommended that this teaching is done after the Zoology one
LEARNING OUTCOMES	Knowledge and ability to understand Having methodological foundations and an intra- and inter-disciplinary level of knowledge. Ability to apply knowledge and understanding To be able to increase one's knowledge and have the ability to use the analogy tool to apply known solutions to new problems. Autonomy of judgment Being able to conceive and support arguments in its field of relevance. Communication skills Being able to communicate in synthesis to interlocutors, specialists or not specialists, the different aspects of the discipline. Learning skills Having acquired a capacity for synthesis and critical capacity
ASSESSMENT METHODS	The exam includes a final oral exam on the contents illustrated in class. The final evaluation will be in thirtieths, articulated as follows: excellent: 30-30 and praise; very good: 27-29; good: 24-26; discrete: 21-23; enough: 18-20; insufficient
EDUCATIONAL OBJECTIVES	Provide a comprehensive and integrated view of comparative anatomy, which varies, phylogenetic and evolutionary key, from the biology of development and embryology compared to the complex structures of vertebrate organs, in a functional way. Describe vertebrates in a functional and evolutionary perspective, why comparative anatomy is not just the description of forms and functions, but as these are the result of an evolutionary adaptation.
TEACHING METHODS	Front lessons
SUGGESTED BIBLIOGRAPHY	Anatomia Comparata dei Vertebrati di Liem, Bemis, Walker, Grande. Edizioni EdiSES. 2 edizione ISBN: 9788879596947 Manuale di Anatomia Comparata dei Vertebrati di T. Zavanella Edizioni Delfino. 2 edizione ISBN: 9788872873915 Anatomia Comparata dei Vertebrati di G.C. Kent Edizioni Piccin. ISBN: 8829913057 Anatomia Comparata, a cura di V. Stingo, Edi-Ermes. ISBN: 9788870515268 Functional Anatomy of the Vertebrates. Karel F. Liem, Karel Liem, Warren Franklin Walker, William E. Bemis, Lance Grande, Warren F. Walker, Jr. Harcourt College Publishers, 2001. 3 edizione ISBN: 9780030223693

SYLLABUS

Hrs	Frontal teaching
6	Presentation of learning objectives of the course and of the program. Major evolutionary steps that have marked the path of evolution of the vertebrates: notochord, acquisition of jaws,transition from the water to the mainland, cleidoic egg, endothermy.
4	Comparative embryology elements: membranes surrounding the egg, fertilisation, segmentation, Gastrulation, embryonic formation of three leaflets, outbuildings neurulation and neural crests, extraembryonic cell destiny, derivatives of embryonic germ layers.
7	Phylogeny, structure and functions of the skeleton. Derivation of bone tissue, skeleton substitutes, dermal skeleton. Evolution of some parts.
5	General structure, development and derivatives of seed coat in various vertebrates
10	Structure, evolution and function of the nervous system and sensory organs.
5	Structure, evolution and function of the respiratory system water-air.
6	Phylogeny and ontogeny of the heart and major vessels, functions
5	Structure, evolution and function of the excretory system

DOCENTE: Prof.ssa MIRELLA VAZZANA- *Lettere A-K*

PREREQUISITES	No specific prerequisites, but it is recommended that this teaching is done after the Zoology one
LEARNING OUTCOMES	Knowledge and ability to understand Having methodological foundations and an intra- and inter-disciplinary level of knowledge. Ability to apply knowledge and understanding To be able to increase one's knowledge and have the ability to use the analogy tool to apply known solutions to new problems. Autonomy of judgment Being able to conceive and support arguments in its field of relevance. Communication skills Being able to communicate in synthesis to interlocutors, specialists or not specialists, the different aspects of the discipline. Learning skills Having acquired a capacity for synthesis and critical capacity
ASSESSMENT METHODS	The exam includes a final oral exam on the contents illustrated in class. The final evaluation will be in thirtieths, articulated as follows: excellent: 30-30 and praise; very good: 27-29; good: 24-26; discrete: 21-23; enough: 18-20; insufficient
EDUCATIONAL OBJECTIVES	Provide a comprehensive and integrated view of comparative anatomy, which varies, phylogenetic and evolutionary key, from the biology of development and embryology compared to the complex structures of vertebrate organs, in a functional way. Describe vertebrates in a functional and evolutionary perspective, why comparative anatomy is not just the description of forms and functions, but as these are the result of an evolutionary adaptation.
TEACHING METHODS	Front lessons
SUGGESTED BIBLIOGRAPHY	Anatomia Comparata, a cura di V. Stingo, Edi-Ermes. Data di pubblicazione 1 settembre 2016; ISBN-10 8870515265; ISBN-13 978-870515268. Anatomia Comparata dei Vertebrati di Liem, Bemis, Walker, Grande Edizioni EdiSES. Edizione II/2011, ISBN 9788879596947. Functional Anatomy of Vertebrates: An Evolutionary Perspective. Data di pubblicazione 14 luglio 2006, ISBN-10: 0534419194; ISBN-13: 978-0534419196. Manuale di Anatomia Comparata dei Vertebrati di T. Zavanella Edizioni Delfino. Edizione: 2. Data di Pubblicazione: 2008. ISBN:872873916. Anatomia Comparata dei Vertebrati di G.C. Kent Edizioni Piccin. Data di Pubblicazione: 1997, ISBN: 8829913057.

SYLLABUS

Hrs	Frontal teaching
6	Presentation of the training objectives of the course and the program. Main evolutionary steps that have marked the evolutionary path of vertebrates: notochord, acquisition of jaws, passage on the mainland, cledoic egg, endothermia.
4	Elements of evolutionary comparative embryology: membranes that envelop the egg, fertilization, segmentation, gastrulation, formation of the three embryonic sheets, extra-embryonic annexes, and neurulation fate of neural crest cells, derivatives of embryo heets.
8	Phylogenesis, structure and functions of the skeleton. Derivation of bone tissue, replacement skeleton, dermascheleter. Evolution of some parts.
4	General structure, development and derivatives of the integument in various vertebrates.
10	Structure, evolution and function of the nervous system and sense organs.
4	Structure, evolution and function of the water-air respiratory system.
6	Phylogeny and ontogenesis of the heart and major vessels, function
4	Structure, evolution and function of the excretory system
2	Elements of the digging system