General Information	
Academic subject	Entomology
Degree course	Master's degree in Natural Science
Curriculum	L-32
ECTS credits	6
Compulsory attendance	Strongly reccommended
Language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Francesca Garganese	francesca.garganese@uniba.it	AGR/11

ECTS credits details	Area		CFU/ETCS
Basic teaching activities	Entomological Discipline		6

Class schedule	
Period	I° semester
Year	II
Type of class	Frontal lesson

Time management	
Hours	150
In-class study hours	48
Out-of-class study hours	142

Academic calendar	
Class begins	October
Class ends	January

Syllabus	
Prerequisites/requirements	Recommended the contents of the Zoology and Animal Ecology courses
Expected learning outcomes	*Knowledge and understanding on:* The student must understand the role of insects as the main constituents of ecosystems and the positive or negative relationship with man in: ecosystem services (pollination, manure processing, decomposition of carcasses and as a food source for animals); in scientific use (as bioindicators, as established by environmental quality, as controlled by biodiversity); in commercial use (silk, dyes, inks and waxes); in the conservation of insects (invasions and introduction of insects, natural expansion of areas). Know the morpho-specific and biological characteristics typical of insects. Recognize the main taxes and common insect species in natural and artificial environments. *Applying knowledge and understanding* on: The student must: go back from the morphology to the biology and lifestyle of the Taxa studied; discuss the morphological, biological and life cycle specializations in relation to man and living species; reunite the youth

	stadiums with the corresponding adults; acquire the basic technical knowledge to collect, sample, preserve, exhibit and mount insects or important parts of their bodies on a slide, in order to share the study of insects. The different interpretations and syntheses developed during the lessons will also be compared in the classroom regarding the topics offered by the subject.
	Making informed judgments and choices: The student will have to acquire skills in solving complex problems and in rigorous and independent analysis in Entomology. Students will be invited individually and collectively to discuss antithetical interpretations of the case studies proposed during the lesson. *Making informed judgments and choices:* *Communicating knowledge and understanding*
	The student will have to acquire his own scientific vocabulary, and the correct entomological terminology to independently share the topics covered during the course with a strong conceptual connotation of the morphology, phenology and parameters that regulate the life of insects. The student will have to acquire his own scientific vocabulary, and the correct entomological terminology to independently share the topics covered during the course with a strong conceptual connotation of the morphology, phenology and parameters that regulate the life of insects. *Capacities to continue learning* The student will acquire the ability to interpret the role of an important part of biocoenosis, connecting the fundamental concepts of this teaching with those of other subjects of study. This ability will also be induced by questioning and interacting with students during the lessons.
Contents	Importance of diversity and insect protection. Morphology and organization of the soma. Anatomy and physiology. Sense organs and behavior. Insect reproduction. Development and biology. Systematics and Taxonomy of Insects. Evolution and biogeography. Insects and man. Hypogean and aquatic lifestyle insects. Insects and plants. Insect society. Predation and parasitoidism. Insect defense strategies. Medical and veterinary entomology. Entomology methods: capture, conservation, collection and identification of insects
Course program	
Bibliography	Beutel R.G., Friedrich F., Si-Qin Ge, Xing-Ke Yang 2014 - Insect Morphology and Phylogeny A textbook for students of entomology. Walter de Gruyter GmbH, Berlin/Boston, ISBN 978-3-11-026263-6 e-ISBN 978-3-11- 026404-3, 516 pp.
Notes	None
Teaching methods	Frontal, circular or linear lessons presented with LCD projector.
Assessment methods	Exam: oral as a discussion of topics available, highlighted, on the notes and on the textbook. Candidates will discuss three topics among the approximately one hundred available. The presence and above all the active participation in the lessons will contribute to a very positive evaluation of the student.
Evaluation criteria	*Knowledge and understanding*

	Ability to recognize and discuss the general characteristics of insects and their main Taxa. We insist on the structure of matter rather than on the details of the species, and on the connection between concepts of entomology, on strategy and vision rather than on the notion. • *Applying knowledge and understanding* The student must be able to describe entomological topics with language properties by proposing their application to the resolution of real problems. The ability to draw on theory to hypothesize solutions to real problems will lead to a very positive evaluation of the exam. • *Autonomy of judgment* The ability to independently identify links with other disciplines of the course of study will lead to a very positive assessment of the exam. • *Communicating knowledge and understanding* The student who has acquired the ability to express concepts and formulate interpretations in Entomology with clear exposition and the appropriate use of the terminology learned during the course, and who proves to be able to divulge or share the knowledge acquired will increase his final mark, with the possibility of achieve the maximum mark. •*Communication skills* The student who proves to be able to independently acquire further knowledge in Entomology even with an interdisciplinary access, will have recognition through an increase in the final mark up to the maximum. • *Capacities to continue learning*
Further information	