

SYLLABUS

REGARDING THE QUALIFICATION CYCLE FROM 2021-2022 TO 2023-2024

1. BASIC COURSE/MODULE INFORMATION

Course/Module title	Paleobiology
Course/Module code *	
Faculty (name of the unit offering the field of study)	College of Natural Sciences
Name of the unit running the course	Institute of Biology and Biotechnology
Field of study	Biology
Qualification level	I degree
Profile	general academic
Study mode	stationary
Year and semester of studies	year I, sem. 2
Course type	Primary course
Language of instruction	English
Coordinator	dr hab. Iwona Kania-Kłosok, prof. UR
Course instructor	dr hab. Iwona Kania-Kłosok, prof. UR

* - as agreed at the faculty

1.1. Learning format – number of hours and ECTS credits

Semester (no.)	Lectures	Classes	Colloquia	Lab classes	Seminars	Practical classes	Internships	others	ECTS credits
2	6	15	4			10	5		3

1.2. Course delivery methods

- conducted in a traditional way
- involving distance education methods and techniques

1.3. Course/Module assessment (exam, pass with a grade, pass without a grade)

2. PREREQUISITES

Good communication, reading and writing English; high school zoology and botany level.

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3. OBJECTIVES, LEARNING OUTCOMES, COURSE CONTENT, AND INSTRUCTIONAL METHODS

3.1. Course/Module objectives

O1	- Explain and be able to discuss the processes of taphonomy, autotaphonomic, ecological, taphotopic, postburial, products of the taphonomic process.
O2	- Characterize different kinds of fossil resins, selected groups of animals and plants in Mesozoic and Cenozoic record.
O3	- Explain dynamics of the taxonomic diversity; evolution of selected groups of organisms with particular reference to the Diptera.
O4	- Characterize morphology and phylogeny of selected groups of plants and animals known from fossil record.
O5	- Characterize examples of behavior of fossil animals preserved in amber.
O6	- Develop skills in performing collaborative research.

3.2. COURSE/MODULE LEARNING OUTCOMES (TO BE COMPLETED BY THE COORDINATOR)

Learning Outcome	The description of the learning outcome defined for the course/module	Relation to the degree programme outcomes
LO_01	- student will be able to characterize the major types of fossil resins, the morphology and evolution of selected groups of fauna and flora;	K_Wo1
LO_02	- student will understand the way and the directions of evolution in particular group of fossil taxa, their morphology and taxonomy and the processes of taphonomy and fossilization;	K_Wo1
LO_03	- student will be able to perform basic assessment of the types of resins and recognize representatives of most common groups of fauna and flora preserved in fossil resins;	K_Uo4
LO_04	- student will be able to make a reconstruction of morphology of chosen representatives of fossil taxa preserved as an imprints or inclusions;	K_Uo4
LO_05	- student will be able to carry out the biometric measurements of fossil insects	K_Uo4

	with application of the basic techniques used in the paleontology;	
LO_o6	- student will be able to develop skills in performing collaborative research.	K_Ko1

3.3. Course content (to be completed by the coordinator)

A. Lectures

Content outline
The fossil record; different types of fossil resins; taphonomic processes of fossils and ichnofossils in different paleoenvironments and modes of their preservation, marine deposits, non-marine subaquatic paleoenvironments, lacustrine deposits, swamp, marsh and other wetlands, fluvial, spring deposits, subaerial paleoenvironments.
The most important episodes in history of life; inclusions in amber, taphonomy; direct burial in sedimentary deposits; autotaphonomic factors, ecological factors, ecological factors affecting organisms in their life-time; mortality factors; post-moderns ecological factors, taphotopic factors, technical factors.

B. Classes, tutorials/seminars, colloquia, laboratories, practical classes

Content outline
The processes of taphonomy, fossilization, types of fossil resins, major fossil deposits, types of preservation, taphonomy of fossils, autotaphonomic, ecological, taphotopic, postburial, products of the taphonomic process.
Stratigraphic principles.
Early stage of evolution of the representatives of selected groups of fauna and flora.
General features of chosen group of fauna and flora with particular references to the late Cretaceous taxa.
Dynamics of the taxonomic diversity, environments and early stages of evolution of chosen groups of fauna and flora.
Morphology and phylogeny of selected groups with examples of behavior of fossils preserved in amber.

3.4. Methods of Instruction

e.g.

Lecture: a problem-solving lecture/a lecture supported by a multimedia presentation/ distance learning

Classes: text analysis and discussion/project work (research project, implementation project, practical project)/ group work (problem solving, case study, discussion)/didactic games/ distance learning

Laboratory classes: designing and conducting experiments

Lecture: Audio/video presentations.

Classes: practical laboratory work, discussion, departing and presenting results.

4. Assessment techniques and criteria

4.1 Methods of evaluating learning outcomes

Learning outcome	Methods of assessment of learning outcomes (e.g. test, oral exam, written exam, project, report, observation during classes)	Learning format (lectures, classes,...)
LO-01-06	Lecture, audio/video presentations.	LECTURES
LO-01-06	Practical laboratory work, discussion, departing and presenting results.	CLASSES
LO-01-06	Field work.	PRACTICAL CLASSES

4.2 Course assessment criteria

Attendance is expected in all lectures, indoor workshop.

Assessment for this course is carried out in many different ways. It takes into consideration both knowledge of the lecture but also critical thinking skills, technical skills, communication skills and collaborative skills.

5. Total student workload needed to achieve the intended learning outcomes – number of hours and ECTS credits

Activity	Number of hours
Scheduled course contact hours	31
Other contact hours involving the teacher (consultation hours, examinations)	9
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	15
Total number of hours	55
Total number of ECTS credits	3

* One ECTS point corresponds to 25-30 hours of total student workload

6. Internships related to the course/module

Number of hours	n.a.
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Internship regulations and procedures	n.a.
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7. Instructional materials

<p>Compulsory literature:</p> <ul style="list-style-type: none"> • Walker C., Ward D., 2000. Fossils. Dorling Kindersley Limited, London. • Prothero D. R., 2013. Bringing Fossils to Life: An Introduction to Paleobiology on Amazon. Columbia University Press. • Kosmowska-Ceranowicz B. 2006. Amber, views, options. WUW, Warszawa. • Patzkowsky M.E., 2012. Stratigraphic Paleobiology. Understanding the Distribution of Fossil Taxa in Time and Space. The University of Chicago Press. • Gould J.S., 1989. Wonderful Life: The Burgess Shale and the Nature of History. W.W. Norton & Co., United States. • Grimaldi D., Engel M.S. 2005. Evolution of the insects. Cambridge University Press, Cambridge. • Rasnitsyn A.P., Quicke D.L.J. 2006. History of insects. Kluwer Academic Publishers, Dordrecht.
<p>Complementary literature:</p> <ul style="list-style-type: none"> • Martínez-Delclòs X.; Briggs D.E.G., Peñalver E. 2004. Taphonomy of insects in carbonates and amber. <i>Palaeogeography Palaeoclimatology Palaeoecology</i> 203: 19-64. • Szwedo J., Sontag E. 2009. The traps of the 'amber trap'. Amber-trapped insects trap scientists with enigmas. In: Berning B., Podenas S. (Eds.), Amber: Archive of the deep time. <i>Denisia</i> 26: 155–169. • Szwedo J., Sontag E. 2013. The flies (Diptera) say that amber from the Gulf of Gdańsk, Bitterfeld and Rovno is the same Baltic amber. <i>Polish Journal of Entomology</i> 82: 379-388. • Kania I., Wegierek P. 2008. Palaeoaphididae (Hemiptera, Sternorrhyncha) from Lower Cretaceous Baissa deposits. Morphology and classification. Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków. <i>Monografie faunistyczne</i>, 25: 132.

Approved by the Head of the Department or an authorised person