COURSE DESCRIPTION

Mesozoic and Cenozoic Paleoenvironments

Academic year 2025-2026

1. Programme-related data

1.1. Higher Education Institution	Babeș-Bolyai University
1.2. Faculty	Faculty of Biology and Geology
1.3. Doctoral School	Theoretical and Applied Geology
1.4. Field of study	Geology
1.5. Level of study	Doctorate

2. Course-related data

2.1. Course title	**Mesozoic and Cenozoic Paleoenvironments**				Course code	**SDG03**
2.2. Course coordinator	Prof. univ. dr. habil. Ioan Tanţău					
2.3. Seminar coordinator	Prof. univ. dr. habil. Ioan Tanţău					
2.4. Year of study	1	2.5. Semester	II	2.6. Type of assessment	Exam	
2.7. Course status	Optional		2.8. Course type		Specialisation subject	

3. Total estimated time (hours per semester of teaching activities)

3.1. Number of hours per week	**4**	of which: 3.2. course	**2**	3.3. seminar/ laboratory/ project	**2**
3.4. Total of hours in the curriculum	48	of which: 3.5. course	24	3.6. seminar/ laboratory	**24**
Time allocation for individual study (IS) and self-taught activities (ST)					**hours**
Learning from textbooks, course materials, bibliography, and notes (IS)					60
Additional research in the library, on subject-specific electronic platforms, and on-site					70
Preparing seminars/ laboratories/ projects, assignments, reports, portfolios, and essays					46
Tutoring (professional guidance)					10
Examinations					4
Other activities: two-way communication with the course coordinator					12
3.7. Total hours of individual study (IS) and self-taught activities (ST)				202	
3.8. Total hours per semester				250	
3.9. Number of credits				10	

4. Prerequisites (where applicable)

4.1. curriculum-related	Undergraduate courses: Paleobotany and Palynology; Micropaleontology
4.2 skills-related	

5. Specific conditions (where applicable)

5.1. course-related	
5.2. seminar/laboratory-related	

6. Subject-specific learning outcomes

Knowledge
⍰ Knows advanced concepts, theories, and models in the field.
⍰ Identifies frontier literature in the field.
⍰ Knows advanced theoretical and experimental research methods and techniques.

▢ Understands scientific methodology applied to the field.
▢ Understands statistical methods for data analysis.
▢ Knows concepts of critical thinking and logical reasoning.
▢ Understands methods for data analysis and interpretation.
Skills
▢ Applies knowledge to analyze complex problems.
▢ Integrates theoretical and practical concepts to develop innovative solutions.
▢ Designs and applies complex methods for problem investigation (sample preparation, taxonomic identification).
▢ Uses techniques for processing and interpreting micropaleontological data.
▢ Documents and synthesizes relevant scientific information.
▢ Produces analytical reports relevant to paleoecological and stratigraphic interpretation.
▢ Analyses and interprets complex issues
Responsibility and autonomy
▢ Works independently in investigating and expanding knowledge.
▢ Assumes responsibility for the accuracy of applied procedures.
▢ Makes autonomous decisions regarding the selection and adaptation of methods.
▢ Assumes responsibility for procedural correctness.
▢ Ensures the accuracy of processed data.
▢ Works independently in selecting data processing methodologies.
▢ Assumes responsibility for reasoning and decision justification.

7. Contents

7.1. Course	Teaching and learning methods	Remarks[1]
Introductory course. Generalities, applications, and importance. Terminology.	Presentation, discussions, case studies	2
Chronostratigraphy and biostratigraphy of the Mesozoic and Cenozoic	Presentation, discussions, case studies	2
Modern methods used in the study of past paleoenvironments: principles, applications	Presentation, discussions, case studies	2
Mesozoic and Cenozoic marine ecosystems	Presentation, discussions, case studies	4
Mesozoic and Cenozoic continental ecosystems: faunal evolution	Presentation, discussions, case studies	4
Mesozoic and Cenozoic continental ecosystems: evolution of vegetation and climate changes	Presentation, discussions, case studies	6
Paleogeography of Mesozoic and Cenozoic	Presentation, discussions, case studies	4
Bibliography		

---

[1] For example, organisational aspects, recommendations for students, specific aspects relating to the course/seminar, such as inviting experts in the field, etc.

7.2. Seminar/ laboratory	Teaching and learning methods	Remarks
Use of methods for processing paleontological samples in the laboratory processing	Presentation, case studies, discussions, exercises	4
Morphology and structure of microfossils: identification of some types of microfossils.	Presentation, case studies, discussions, exercises	6
Graphic processing of data, with the help of specialized software	Presentation, case studies, discussions, exercises	4
Case studies prepared together with doctoral students, based on individual doctoral research topics	Presentation, case studies, discussions, exercises	10

Bibliography
The specific bibliography for each topic is established according to the research topic of each doctoral student.
Bibliografia specifică fiecărei teme este stabilită în funcţie de subiectul de cercetare al fiecărui doctorand Benton M. J. 2008. The history of life. A very short introduction. Oxford University Press. Dragastan, O., Petrescu, I., Olaru, L., 1980. Palinologie. Ed. Didactică şi Pedagogică Bucureşti. MacDonald, G., 2001. Space, Time and life: The Science of Biogeography. John Wiley & Sons Petrescu, I., 2003: Palinologia Terţiarului. Ed. Carpatica, Cluj-Napoca. https://earthobservatory.nasa.gov/features/Paleoclimatology_Understanding - http://www.sci.sdsu.edu/plants/plantsystematics/pdfs/Punt_etal2006-PollenPalynology.pdf - http://www.colby.edu/info.tech/BI211/ - https://climatic.inforef.be/cle_pollen/intro.htm

8. Evaluation

Type of activity	8.1 Evaluation criteria[2]	8.2 Evaluation methods[3]	8.3 Percentage in the final grade
8.4. Course	Knows advanced concepts, theories, and models in the field	Exam	40
	Knows statistical methods for data analysis		30
8.5. Seminar/ laboratory	Designs and applies complex methods for problem investigation (sample preparation, taxonomic identification)	Continuous assessment	10
	Produces analytical reports for paleoecological and stratigraphic interpretation		20
8.6 Minimum standard for passing			
▢ Grade 5 at the exam			
▢ Grade 5 for continuous assessments			

9. SDG labels (Sustainable Development Goals)[4]

	○	Sustainable Development Generic Label

---

[2] The evaluation criteria must directly reflect the learning outcomes targeted at the level of the degree programme respectively at the level of the subject. More specifically, the learning outcomes set out in the expected learning outcomes are assessed.

[3] Both final evaluation methods and ongoing evaluation strategies should be established.

[4] Select a single label which, according to the *Implementation of SDG labels in the academic process*, best matches the subject. If the subject addresses sustainable development in a generic manner (i.e. by presenting/introducing the general framework of sustainable development, etc.), then the Sustainable Development generic label may be applied. If none of the labels describe the subject, select the last option: *"No label applies."*

1 FĂRĂ SĂRĂCIE	2 FOAMETE „ZERO"	3 SĂNĂTATE ȘI BUNĂSTARE	4 EDUCAȚIE DE CALITATE	5 EGALITATE DE GEN	6 APĂ CURATĂ ȘI SANITAȚIE	7 ENERGIE CURATĂ ȘI LA PREȚURI ACCESIBILE	8 MUNCĂ DECENTĂ ȘI CREȘTERE ECONOMICĂ	9 INDUSTRIE, INOVAȚIE ȘI INFRASTRUCTURĂ
O	O	O	O	O	O	O	O	O
10 INEGALITĂȚI REDUSE	11 ORAȘE ȘI COMUNITĂȚI DURABILE	12 CONSUM ȘI PRODUCȚIE RESPONSABILE	13 ACȚIUNE CLIMATICĂ	14 VIAȚA ACVATICĂ	15 VIAȚA TERESTRĂ	16 PACE, JUSTIȚIE ȘI INSTITUȚII EFICIENTE	17 PARTENERIATE PENTRU REALIZAREA OBIECTIVELOR	No label applies
O	O	O	X	O	O	O	O	O

Date of entry:
11.05.2025

Signature of course coordinator

…………………

Signature of seminar coordinator

…………………

Date of approval by the doctoral school council:
16.05.2025

Signature of the doctoral school director

…………………