

## COURSE SYLLABUS

### 1. Data about the program

1.1 Higher education institution	Babeş-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 Study cycle	Doctorate
1.6 Study program / Qualification	Doctoral training / Doctor of Geology

### 2. Course data

2.1 Name of discipline							
2.2 Teacher responsible for lectures		Conf.dr. <i>habil.</i> Ioan Tanțău					
2.3 Teacher responsible for seminars		Conf.dr. <i>habil.</i> Ioan Tanțău					
2.4 Year of study	1	2.5 Semester	2	2.6. Type of evaluation	E	2.7 Course framework	O

### 3. Estimated total time of teaching activities (hours per semester)

3.1 Hours per week	4	Out of which: 3.2 Lectures	2	3.3 Seminars / Laboratory classes	2
3.4 Total hours in the curriculum	48	Out of which: 3.5 Lectures	24	3.6 Seminars / Laboratory classes	24
Allocation of study time:					
Study supported by textbooks, other course materials, recommended bibliography and personal student notes					30
Additional learning activities in the library, on specialized online platforms and in the field					20
Preparation of seminars / laboratory classes, topics, papers, portfolios and essays					15
Tutoring					2
Examinations					2
Other activities: -					
3.7 Individual study (total hours)					65
3.8 Total hours per semester					117
3.9 Number of credits					10

### 4. Preconditions (where applicable)

4.1 Curriculum	•
4.2 Competences	•

### 5. Conditions (where applicable)

5.1 Conducting lectures	•
5.2 Conducting seminars / laboratory classes	•

### 6. Specific competences acquired

<b>Professional competences</b>	<ul style="list-style-type: none"> <li>• C1. Knowledge of paleoclimate and environmental change in the Cenozoic</li> <li>• C2. Learning modern, interdisciplinary principles and methods used in the study of Cenozoic palaeoenvironments.</li> <li>• C3. Use of specialised equipment and software to obtain, process and interpret primary data;</li> </ul>
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<b>Transversal competences</b>	<p>CT1. The use of assimilated knowledge in new, interdisciplinary contexts</p> <p>CT2. Using theoretical notions in solving practical problems</p> <p>CT3. Ability to critically evaluate scientific information</p>
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## 7. Course objectives (based on the acquired competencies grid)

7.1 The general objective of the course	<ul style="list-style-type: none"> <li>• understanding how palaeoenvironmental studies contribute to advancing our knowledge of Earth evolution</li> </ul>
7.2 Specific objectives	<ul style="list-style-type: none"> <li>• Understanding the evolution of Cenozoic palaeomedians</li> <li>• Learning the principles of dating and correlation of geological formations.</li> <li>• Use of specific methods in paleoenvironment and paleoclimate reconstructions</li> </ul>

## 8. Content

8.1 Lectures	Teaching methods	Comments
Introductory course. Generalities, applications, and importance. Terminology.	Presentation, discussions, case studies	
Chronostratigraphy and biostratigraphy of the Cenozoic		
Modern methods used in the study of Cenozoic paleoenvironments: principles, applications		
Cenozoic marine ecosystems		
Cenozoic continental ecosystems: faunal evolution		
Cenozoic continental ecosystems: evolution of vegetation and climate		
Paleogeography of the Cenozoic		
8.2 Seminars / laboratory classes	Teaching methods	Comments
Use of methods for processing paleontological samples in the laboratory processing.	Presentation, case studies, discussions, exercises	
Morphology and structure of microfossils: identification of some types of microfossils.		
Graphic processing of data, with the help of specialized software		
Case studies prepared together with doctoral students, based on individual doctoral research topics		
<p>References:</p> <p>The specific bibliography for each topic is established according to the research topic of each doctoral student.</p> <p>Bibliografia specifică fiecărei teme este stabilită în funcție de subiectul de cercetare al fiecărui doctorand</p> <p>Benton M. J. 2008. The history of life. A very short introduction. Oxford University Press.</p> <p>Dragastan, O., Petrescu, I., Olaru, L., 1980. Palinologie. Ed. Didactică și Pedagogică București.</p> <p>MacDonald, G., 2001. Space, Time and life: The Science of Biogeography. John Wiley &amp; Sons</p> <p>Petrescu, I., 2003: Palinologia Terțiarului. Ed. Carpatica, Cluj-Napoca.</p> <p><a href="https://earthobservatory.nasa.gov/features/Paleoclimatology_Understanding">https://earthobservatory.nasa.gov/features/Paleoclimatology_Understanding</a></p> <p>- <a href="http://www.sci.sdsu.edu/plants/plantsystematics/pdfs/Punt_etal2006-PollenPalynology.pdf">http://www.sci.sdsu.edu/plants/plantsystematics/pdfs/Punt_etal2006-PollenPalynology.pdf</a></p> <p>- <a href="http://www.colby.edu/info.tech/BI211/">http://www.colby.edu/info.tech/BI211/</a></p> <p>- <a href="https://climatic.inforef.be/cle_pollen/intro.htm">https://climatic.inforef.be/cle_pollen/intro.htm</a></p>		

**9. Aligning the contents of the discipline with the expectations of the epistemic community representatives, professional associations and standard employers operating in the program field**

- The lectures and lab activities are designed and updated to give the students the necessary scientific knowledge and practical abilities required by the professional environment.

**10. Examination**

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Weight in the final grade
10.4 Lectures	Assessment of knowledge	Written exam	50%
10.5 Seminars / laboratory classes	Activity during seminars	Discussions	20%
	Assessment of knowledge	Practical tests	30%
10.6 Minimum performance standard			
<ul style="list-style-type: none"> <li>• 50% of the subjects required by the written exam</li> <li>• 50% of the practical test</li> </ul>			

Date of issue  
09.05.2024

Signature of the teacher  
responsible for lectures

Signature of the teacher  
responsible for seminars

Date of approval by the doctoral school council  
15.05.2024

Signature of the doctoral school director