

COURSE SYLLABUS

1. Data about the program

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|-----------------------------------|---------------------------------------|
| 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

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|--------------------------------------|---|------------------------------------------|------------------------------------|-------------------------|---|----------------------|---|--|
| 2.1 Name of discipline | | Mesozoic and Cenozoic palaeoenvironments | | | | | | |
| 2.2 Teacher responsible for lectures | | | Prof.dr. <i>habil.</i> Ioan Tanțău | | | | | |
| 2.3 Teacher responsible for seminars | | | Prof.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)

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|-----------------------------------------------------------------------------------------------------------|----|----------------------------|----|-----------------------------------|-----|
| 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)

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|-----------------|---|
| 4.1 Curriculum | • |
| 4.2 Competences | • |

5. Conditions (where applicable)

| | |
|----------------------------------------------|---|
| 5.1 Conducting lectures | • |
| 5.2 Conducting seminars / laboratory classes | • |

6. Specific competences acquired

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|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Professional competences | <ul style="list-style-type: none"> • C1. Knowledge of paleoclimate and environmental change in Mesozoic and Cenozoic • C2. Learning modern, interdisciplinary principles and methods used in the study of Mesozoic and Cenozoic palaeoenvironments. • C3. Use of specialised equipment and software to obtain, process and interpret primary data; |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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| Transversal competences | CT1. The use of assimilated knowledge in new, interdisciplinary contexts CT2. Using theoretical notions in solving practical problems CT3. Ability to critically evaluate scientific information |
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7. Course objectives (based on the acquired competencies grid)

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

8. Content

| 8. Content | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------|
| 8.1 Lectures | Teaching methods | Comments |
| Introductory course. Generalities, applications, and importance. Terminology. | Presentation, discussions, case studies | |
| Chronostratigraphy and biostratigraphy of the Mesozoic and Cenozoic | | |
| Modern methods used in the study of past paleoenvironments: principles, applications | | |
| Mesozoic and Cenozoic marine ecosystems | | |
| Meso/Cenoz. continental ecosystems: faunal evolution | | |
| Mesozoic/Cenoz. continental ecosystems: evolution of vegetation and climate | | |
| Paleogeography of Mesozoic and 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 | | |
| | | |
| References: The specific bibliography for each topic is established according to the research topic of each doctoral student. Bibliografia specifică fiecărei teme este stabilită în funcție 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 și Pedagogică București. MacDonald, G., 2001. Space, Time and life: The Science of Biogeography. John Wiley & Sons Petrescu, I., 2003: Palinologia Terțiarului. 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 | | |

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"> • 50% of the subjects required by the written exam • 50% of the practical test | | | |

Date of issue
11.05.2025

Signature of the teacher
responsible for lectures

Signature of the teacher
responsible for seminars

Date of approval by the doctoral school council
16.05.2025

Signature of the doctoral school director