

## 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	<b>Carbonate platforms: origin, classification and sedimentary evolution</b>					
2.2 Teacher responsible for lectures	Acad. Prof. Emerit Dr. Ioan Bucur					
2.3 Teacher responsible for seminars	Acad. Prof. Emerit Dr. Ioan Bucur					
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	Previous acquisition of basic knowledge in the field of geology
4.2 Competences	•

### 5. Conditions (where applicable)

5.1 Conducting lectures	•
5.2 Conducting seminars / laboratory classes	Attendance at the seminars is mandatory

### 6. Specific competences acquired

<b>Professional competences</b>	<ul style="list-style-type: none"> <li>• C1 Understanding the mechanisms of development and evolution of carbonate sedimentation</li> <li>• C2 The possibility of judging carbonate rock successions in a stratigraphic and structural context</li> <li>• C3 The possibility of using data in practical studies on deposits of economic importance</li> </ul>
<b>Transversal competences</b>	<ul style="list-style-type: none"> <li>• CT1 Integrating the knowledge acquired through other disciplines of the doctoral program</li> <li>• CT2 Study skills in complex research teams</li> <li>• CT3 Teamwork skills</li> </ul>

## 7. Course objectives (based on the acquired competencies grid)

7.1 The general objective of the course	Better understanding by the doctoral students of the issues related to the carbonate platform sedimentation and environments: context and specific characteristics.
7.2 Specific objectives	Acquisition of skills in the identification and characterization of economically important carbonate rock bodies

## 8. Content

8.1 Lectures	Teaching methods	Comments
1. Carbonate systems: ways of producing carbonate sediments; food chain; carbonate factories	Presentation, discussions, case studies	
2. Major factors of carbonate sedimentation: organic productivity and sedimentation rates; carbonate facies		
3. Carbonate platforms: Definition, types, genesis, evolution		
4. Platform margins: reefs, bioclastic barriers, microbial barriers, mud-mounds		
5. Sequence stratigraphy of carbonate shelf deposits: particularities; cycles in shallow water carbonate sediments		
6. Modern carbonate environments; carbonate diagenesis – practical importance		
7. Carbonate platforms in geologic history: Paleozoic, Mesozoic, Cenozoic.		
8.2 Seminars / laboratory classes	Teaching methods	Comments
1. Examples of Mesozoic carbonate platforms	Presentation, case studies, discussions, exercises	
2. Carbonate facies and depositional environments		
3. The Getic Carbonate Platform		
4. Application of sequence stratigraphy criteria to carbonate platform deposits: case studies		
5. Diagenesis of shallow water carbonate rocks: case studies		
6. Platform margins: examples of reef limestones from the Carpathian Realm		

7. Hydrocarbon reservoirs in carbonate platforms: case studies		

#### References:

AHR M.W. (2008) – Geology of carbonate reservoirs: The identification, description and characterization of hydrocarbon reservoirs in carbonate rocks, 277 p., Wiley & Sons, New Jersey

BATHURST, R.G.C. (1975) – Carbonate sediments and their diagenesis. Dev. Sedimentol., 12, 620 p., 359 figs., Elsevier, Amsterdam

FLÜGEL E. - Microfacies of carbonate rocks. 976 p., 151 pl., 326 fig., Springer, Berlin Heidelberg New York.

INSALACO, E., SKELTON, P.W., PALMER, T.J. (eds) (2000) - Carbonate platform systems: components and interaction. Geological Society, Special Publication 178, London, 227 p.

SCHLAGER W. (2005) – Carbonate sedimentology and sequence stratigraphy, SEPM concepts in sedimentology and paleontology 8, 200 p., Boulder, Colorado.

SCHOLLE P.A., BEBOUT D.G. & MOORE C.H. (1998) – Carbonate depositional environments, AAPG Memoir 33, 708 p., Tulsa, Oklahoma.

TUCKER, M.E. AND WRIGHT, V.P. (1990) Carbonate sedimentology. Blackwell Science, Oxford, 482 p.

Articles from the journals: FACIES, CARBONATES AND EVAPORATES, GEOARABIA

AAPG BULLETIN, JOURNAL OF PETROLEUM GEOLOGY, SEDIMENTOLOGY, JOURNAL OF SEDIMENTARY RESEARCH, SEDIMENTARY GEOLOGY

#### **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	10%
Assessment of knowledge			
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  
12.05.2025

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