COURSE SYLLABUS

1. Data about the program

1.1 Higher education institution	Babeș-Bolyai University
1.2 Faculty	Faculty of Biology and Geoloogy
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 / PhD in Geology

2. Course data

2.1 Name of discipline	Geochronology						
2.2 Teacher responsible for lectures			Prof.dr. Sorin Filipescu				
2.3 Teacher responsible for seminars			Prof.dr. Sorin Filipescu				
2.4 Year of study	1	2.5 Semester	2	2.6. Type of evaluation	E	2.7 Course framework	Op

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:	hours
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	• Stratigraphy
4.2 Competences	• Use of reference databases

5. Conditions (where applicable)

5.1 Conducting lectures	• Video support
5.2 Conducting seminars / laboratory classes	• Case studies • Following minimum 80% of lab activities

6. Specific competences acquired

Professional competences	• Identification and interpretation of the sequence of geological processes in time; • Ability to observe and interpret the natural proceses at various scales; • Application of theoretical knowledge to the lab and fieldwork, the use of reference sources in the professional activity; • Dating and correlation of the sedimentary geological structures based on biotic events and physical methods.

Transversal competences	• Abylity to analyze and synthetize processes and phenomena using the scientific method; • Ability to carry a responsible individual activity by planning the activities and constantly following the purpose; • Use of the research infrastructure for processing and interpreting the primary geological data; • Writing general and specific professional documents; • Ability to present and justify the results of its own activity and of the synthetic data gathered from the work environment.

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

7.1 The general objective of the course	• Learning the general principles of rock dating, identification and interpretation of the geological processes in space and time;
7.2 Specific objectives	• Learning the principles of stratigraphic dating and correlation of rock units (geochronology / chronostratigraphy) by biostratigraphic, magnetostratigraphic, chemostratigraphic, cyclostratigraphic and other methods.

8. Content

8.1 Lectures	Teaching methods	Comments
The spatial and temporal framework in stratigraphy. Principles of stratigraphic classification.	Presentation, discussion, case studies, exercises	
Chronostratigraphy, chronostratigraphic charts, traditional and modern methods of chronocorrelation		
Case studies of geochronologic / chronostratigraphic dating and correlation of the geological formations.		
References: Cattermole, P., Moore, P.; 1985. *The story of the Earth*. Cambridge University Press. Doyle, P.; Benett, M.R.; Baxter, A.N.; 2001. *The key to Earth History. An introduction to Stratigraphy* (second edition). 293 p. John Willey & Sons. Einsele, G., Ricken, W., Seilacher, A. - eds.; 1991. *Cycles and Events in Stratigraphy*. 955 p. Springer. Gradstein, F.; Ogg, J.; Schmitz, M.D, Ogg, G.M. (eds.); 2012. *The Geologic Time Scale 2012*. 2 vol., 1144p. Elsevier. Salvador, A.; 1994. *Internaţional Stratigraphic Guide – A Guide to Stratigraphic Classification, Terminology and Procedure* (second edition). 214p. The Geological Society of America. Stanley, S.M.; 1986. *Earth and Life Through Time*. 690 p. W.H. Freeman & Comp. Walliser, O.H. (ed.); 1996. *Global events and event stratigraphy in the Phanerozoic*. 333 p. Springer.		
8.2 Seminars / laboratory classes	Teaching methods	Comments
Case studies prepared with the doctoral students, based on their individual doctoral research topics	Presentation, discussion, exercises	
References: According to the individual research topic		

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 stratigraphic and geochronologic principles are the start point for all geological interpretations, therefore are applied in all geological activities

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	70%
	Assessment of knowledge	Ongoing tests	15%
10.5 Seminars / laboratory classes	Activity during seminars	Discussions, answers to questions	15%
	Assessment of knowledge	Written exam	70%
10.6 Minimum performance standard			
• Passing of the theoretical exam • Passing of the exam on the specific subject of the doctoral research topic			

Date of issue
18.02.2022

Signature of the teacher responsible for lectures

Signature of the teacher responsible for seminars

Prof.dr. Sorin Filipescu

Date of approval by the doctoral school council
25.02.2022

Signature of the doctoral school director