



1. General information

Course: THE NATURAL ENVIRONMENT II: TEACHING BIOLOGY AND GEOLOGY**Code:** 46326**Type:** CORE COURSE**ECTS credits:** 6**Degree:** 392 - BACHELOR'S DEGREE IN PRIMARY EDUCATION (AB)**Academic year:** 2023-24**Center:** 101 - FACULTY OF EDUCATION IN ALBACETE**Group(s):** 19 17 18 15**Year:** 4**Duration:** First semester**Main language:** Spanish**Second language:** English**Use of additional languages:** Spanish**English Friendly:** N**Web site:****Bilingual:** Y

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2. Pre-Requisites

The Natural Environment II focuses on going back to the aspects of Life (Biology) and Earth (Geology), which have been acquired in the previous stages of learning. In addition, those aspects will be contextualized in the light of the latest theories and scientific knowledge. Therefore, so that the student can address this course unit successfully, it is highly recommended to be familiar with basic biological questions, such as the main members of the 5 Realms of living beings, the basic ecological principles and the fundamentals of human anatomy and vital functions. The same need exists in Geology topics: the origin and history, and composition of the Earth, and the general understanding of geological processes. Likewise, it will be highly desirable that students have and understand the basic biological and geological terminology.

These issues have been addressed during the stages of Primary Education and Secondary Education. They constitute the basic concepts essential for teaching at Primary Education levels.

Finally, to increase both the success possibilities in learning and surpass the evaluation, it is advisable that students attend classes and participate in the activities that take place during the course.

3. Justification in the curriculum, relation to other subjects and to the profession

The knowledge of the natural environment (biology and geology) is essential for teachers learning at primary school level, since children (6-12 years old) must begin to consolidate their relationship with the environment. To do that the approach needs to be addressed in an increasingly scientific and systematic way to the living beings and the geological materials and processes. For this reason, future teachers should acquire competences that are valid to train the students in relation to the human body, food and health, in its broad sense, living beings, their physiology and environment and the evolution. In the field of geology, future teachers must achieve a correct and solid knowledge regarding the origin and evolution of our planet, as well as its current dynamics, abandoning misconceptions. Primary school teachers must know the minerals and their physical properties, the rocks and their formation processes, the applications of rocks and minerals. Finally, they should know the value of geological materials as vestiges of the past.

The biological part should allow the future Primary school teacher to acquire training on a particularly important content, "healthy eating", to work with children of these stages in the prevention of overweight and obesity. Both problems have been declared as priority interest by the health authorities. Spain is one of the European countries with the highest figures in these disorders. In terms of geological aspects, this course unit will provide the the future teachers of Primary Education with correct knowledge of our planet and the processes developed in it.

The course unit complements perfectly with other topics such as *Teaching Natural and Social Sciences and Cultural Studies* and *The Natural Environment I: Physics, Chemistry and Physics and Chemistry Education*. They complete the scientific and didactic vision essential for the future Teachers. Other topics slightly related are Social Sciences I: Geography and History and mathematics (Didactics of Geometry and Measurement); these can support certain contents of the Natural Environment II.

4. Degree competences achieved in this course

Course competences

Code	Description
1.2.1.II.01	Understand the basic principles and fundamental laws of experimental sciences (Physics, Chemistry, Biology and Geology).
1.2.1.II.02	Know the curriculum of Primary Education concerning these sciences.
CB01	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CG09	Value individual and collective responsibility for a sustainable future.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Describe the systems and apparatuses of the human body, especially those related to nutrition.

Identify the basic components of living matter.

Use correct interpretations of evolution to explain the changes in living beings and their structures.

Understand the Earth as an active system in which different external and internal geological processes take place which might be a risk for humans.

Identify the main groups of living beings and value the importance of biodiversity and natural heritage conservation.

Identify the main geological models.

Identify the location of the Earth and its movements in the Solar System, as well as its location in space.

Interpret the concept of geological time and the ways to measure it.

Evaluate the consequences of an unbalanced diet on children and be able to analyse diets at schools.

Know the properties to identify the main groups of minerals and rocks, appraising their importance for human beings.

Be able to develop and evaluate curriculum contents through appropriate teaching resources and promote relevant skills in students.

Recognize the historical Science-Technology-Society influence, assessing their importance and cultural significance

6. Units / Contents

Unit 1: The living beings: complexity, environment and evolution

Unit 2: Anatomy and physiology

Unit 3: Nutrition and healthy habits

Unit 4: Basics of Geology

Unit 5: Earth interior processes

Unit 6: Earth surface processes

ADDITIONAL COMMENTS, REMARKS

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (practical) [ON-SITE]	Lectures	1.2.1.II.01 1.2.1.II.02 CB01 CG09	1.92	48	N	-	Development of the basic concepts of the course unit.
Problem solving and/or case studies [ON-SITE]	Practical or hands-on activities	1.2.1.II.01 1.2.1.II.02 CB01 CG09	0.4	10	Y	N	Biology: Elaboration of questionnaires.
Writing of reports or projects [OFF-SITE]	Cooperative / Collaborative Learning	1.2.1.II.01 1.2.1.II.02 CB01 CG09	1.8	45	Y	N	Different types of assignments or practical activities about the contents of the course.
Final test [ON-SITE]	Assessment tests	1.2.1.II.01 1.2.1.II.02 CB01 CG09	0.08	2	Y	N	Written tests, which may include short or multiple choice questions. It may also include problem solving or the elaboration of representations.
Study and Exam Preparation [OFF-SITE]	Self-study	1.2.1.II.01 1.2.1.II.02 CB01 CG09	1.8	45	N	-	Self-learning. Cooperative learning. Preparation for progress tests.
Total:			6	150			
Total credits of in-class work: 2.4			Total class time hours: 60				
Total credits of out of class work: 3.6			Total hours of out of class work: 90				

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Progress Tests	50.00%	0.00%	It includes practical activities in class and/or short progress tests to assess students. This is applicable to all the contents of the course.
Final test	50.00%	100.00%	Written test, which may include short and/or multiple-choice questions. It may also include problem solving and the elaboration of representations. It will be about all the contents of the course.
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

The course unit focuses on two aspects of our planet: Biology and Geology. As a consequence, it is a unique course unit. To pass it, it is necessary to obtain, at least 5 points (as average of both parts) in the exams; marks or midterms marks in different topics; mid-terms or any other progress exams will not be kept for the subsequent calls.

For every mistake of those included in the "List of mistakes to avoid" (see Moodle), the student will miss 0.2 points of the marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 points (8 mistakes). If the mistake is repeated, the repetition(s) will be also penalized.

If a student considers that he may have basic knowledge problems to pass the course unit, they can contact the teacher at the beginning of the course, in order to elaborate an extra work program during the development of the course unit. For more information, consult the Virtual Campus platform.

If a fraudulent practice is detected in the evaluation test carried out by a student, the exam will result into failure, with a final grade of zero (0) in the corresponding subject.

The detection by the teacher that an assignment, essay or similar test has not been prepared by the student will result in a numerical grade of zero (0) both in the tests and in the subject in which it has been detected, regardless of the rest of the grades obtained by the student (See Article 8 of the UCLM Student Assessment Regulations).

Non-continuous evaluation:

Given the characteristics of this call, which does not allow either the following of the student's progress, nor the performance of practices, the evaluation will be restricted to a Final comprehensive exam, in which theoretical and practical aspects of the course unit will be consider, in order to assess the appropriate student's formation. The criteria are the same as for the ordinary call. The final exam represents the 100% of the evaluation.

For every mistake of those included in the "List of mistakes to avoid" (see Moodle), the student will miss 0.2 points of the marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 points (8 mistakes). If the mistake is repeated, the repetition(s) will be also penalized.

If a fraudulent practice is detected in the evaluation test carried out by a student, the exam will result into failure, with a final grade of zero (0) in the corresponding subject.

The detection by the teacher that an assignment, essay or similar test has not been prepared by the student will result in a numerical grade of zero (0) both in the tests and in the subject in which it has been detected, regardless of the rest of the grades obtained by the student (See Article 8 of the UCLM Student Assessment Regulations).

Specifications for the resit/retake exam:

Given the characteristics of this call, which does not allow either the following of the student's progress, nor the performance of practices, the evaluation will be restricted to a Final comprehensive exam, in which theoretical and practical aspects of the course unit will be consider, in order to assess the appropriate student's formation. The criteria are the same as for the ordinary call. The final exam represents the 100% of the evaluation.

For every mistake of those included in the "List of mistakes to avoid" (see Moodle), the student will miss 0.2 points of the marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 points (8 mistakes). If the mistake is repeated, the repetition(s) will be also penalized.

If a fraudulent practice is detected in the evaluation test carried out by a student, the exam will result into failure, with a final grade of zero (0) in the corresponding subject.

The detection by the teacher that an assignment, essay or similar test has not been prepared by the student will result in a numerical grade of zero (0) both in the tests and in the subject in which it has been detected, regardless of the rest of the grades obtained by the student (See Article 8 of the UCLM Student Assessment Regulations).

Specifications for the second resit / retake exam:

Given the characteristics of this call, which does not allow either the following of the student's progress, nor the performance of practices, the evaluation will be restricted to a Final comprehensive exam, in which theoretical and practical aspects of the course unit will be consider, in order to assess the appropriate student's formation. The criteria are the same as for the ordinary call. The final exam represents the 100% of the evaluation.

For every mistake of those included in the "List of mistakes to avoid" (see Moodle), the student will miss 0.2 points of the marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 points (8 mistakes). If the mistake is repeated, the repetition(s) will be also penalized.

If a fraudulent practice is detected in the evaluation test carried out by a student, the exam will result into failure, with a final grade of zero (0) in the corresponding subject.

The detection by the teacher that an assignment, essay or similar test has not been prepared by the student will result in a numerical grade of zero (0) both in the tests and in the subject in which it has been detected, regardless of the rest of the grades obtained by the student (See Article 8 of the UCLM Student Assessment Regulations).

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Unit 1 (de 6): The living beings: complexity, environment and evolution	
Activities	Hours
Class Attendance (practical) [PRESENCIAL][Lectures]	8
Problem solving and/or case studies [PRESENCIAL][Practical or hands-on activities]	1.5
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	7.5
Final test [PRESENCIAL][Assessment tests]	.3
Study and Exam Preparation [AUTÓNOMA][Self-study]	10
Teaching period: september 2023-january 2024	
Group 10:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 11:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 19:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 14:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 17:	

Initial date: 18-09-2023	End date: 12-01-2024
Group 18:	
Initial date: 18-09-2023	End date: 12-01-2024
Unit 2 (de 6): Anatomy and physiology	
Activities	Hours
Class Attendance (practical) [PRESENCIAL][Lectures]	8
Problem solving and/or case studies [PRESENCIAL][Practical or hands-on activities]	1
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	8.5
Final test [PRESENCIAL][Assessment tests]	.3
Study and Exam Preparation [AUTÓNOMA][Self-study]	8
Teaching period: september 2023-january 2024	
Group 10:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 11:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 19:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 14:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 17:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 18:	
Initial date: 18-09-2023	End date: 12-01-2024
Unit 3 (de 6): Nutrition and healthy habits	
Activities	Hours
Class Attendance (practical) [PRESENCIAL][Lectures]	8
Problem solving and/or case studies [PRESENCIAL][Practical or hands-on activities]	1
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	10
Final test [PRESENCIAL][Assessment tests]	.4
Study and Exam Preparation [AUTÓNOMA][Self-study]	7
Teaching period: september 2023-january 2024	
Group 10:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 11:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 19:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 14:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 17:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 18:	
Initial date: 18-09-2023	End date: 12-01-2024
Unit 4 (de 6): Basics of Geology	
Activities	Hours
Class Attendance (practical) [PRESENCIAL][Lectures]	8
Problem solving and/or case studies [PRESENCIAL][Practical or hands-on activities]	1
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	10
Final test [PRESENCIAL][Assessment tests]	.4
Study and Exam Preparation [AUTÓNOMA][Self-study]	5
Teaching period: september 2023-january 2024	
Group 14:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 17:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 18:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 10:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 11:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 19:	
Initial date: 18-09-2023	End date: 12-01-2024
Unit 5 (de 6): Earth interior processes	
Activities	Hours
Class Attendance (practical) [PRESENCIAL][Lectures]	8
Problem solving and/or case studies [PRESENCIAL][Practical or hands-on activities]	5.5
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	7
Final test [PRESENCIAL][Assessment tests]	.3
Study and Exam Preparation [AUTÓNOMA][Self-study]	5
Teaching period: september 2023-january 2024	
Group 10:	

Initial date: 18-09-2023	End date: 12-01-2024
Group 11:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 19:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 14:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 17:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 18:	
Initial date: 18-09-2023	End date: 12-01-2024
Unit 6 (de 6): Earth surface processes	
Activities	Hours
Class Attendance (practical) [PRESENCIAL][Lectures]	8
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	2
Final test [PRESENCIAL][Assessment tests]	.3
Study and Exam Preparation [AUTÓNOMA][Self-study]	10
Teaching period: september 2023-january 2024	
Group 10:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 11:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 19:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 14:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 17:	
Initial date: 18-09-2023	End date: 12-01-2024
Group 18:	
Initial date: 18-09-2023	End date: 12-01-2024
Global activity	
Activities	hours
Class Attendance (practical) [PRESENCIAL][Lectures]	48
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	45
Final test [PRESENCIAL][Assessment tests]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	45
Problem solving and/or case studies [PRESENCIAL][Practical or hands-on activities]	10
Total horas: 150	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Ruth Fraile et al.	Science 6 Primary	SM, D.L.		978-84-675-3314-9	2010	
VV.AA	Natural science : 5 primary education.	Edebé, D.L.		978-84-683-1479-2	2014	
Dixon, Dougal	The practical geologist	New York [etc] : Simon and Schuster		967-0-671-74697-1	1992	
Antonio Mª Cabrera Calero et al.	Biología y Geología : 3º ESO	Oxford Educación		978-84-673-5860-5	2011	
Julián de Mora Moreno, Mario Sánchez Gómez, Juan José Gómez-Alday, José Luis Vila Marín, Matías Reolid Pérez, David Sanz Martínez.	Geolodía 17: Estrecho del Hocino: Asómate a una garganta de 500 millones de años https://pandora.dipualba.es/details.vm?q=id:0000058450&lang=es&view=mono	Diputación de Albacete		235-2017	2017	Material de elaboración propia para uso didáctico
McLoughlin, Amanda Jane	Social sciences 5	Oxford University Press		978-84-673-8345-4 (M	2014	
Spooner, Alecia M.	Geology for dummies	Wiley Pubishing		978-1-118-02152-1	2011	
Juan José Gómez-Alday, Julián de Mora Moreno, Mario Sánchez Gómez, José Luis Vila Marín, Santiago Castaño Fernández y David Sanz Martínez	Geolodía 16: ¿Una laguna más salada que la mar? https://sge.usal.es/archivos_pdf/geolod%C3%ADa16/guias_geolodia16/gdia16gui_albacete.pdf	Diputación de Albacete			2016	Material de elaboración propia para uso didáctico
Rumble, J. R.	Handbook of Chemistry and Physics	CRC Press		978-1138367296	2019	
David Sanz, Mario Sánchez-Gómez, Juan José Gómez-Alday	Geolodía 22: De fondo de mar a balcón de la llanura- Una historia de 100 millones de	Diputación de Albacete		2603-8889	2022	Material de elaboración propia para uso didáctico

	años https://sge.usal.es/archivos_pdf/geolodia22/guidas_geolodia22/gdia22guia_albacete.pdf				
VV.AA	Natural science : Primary 5.	Ediciones Bilingües, D.L.	978-84-15867-16-6	2014	
VV.AA	Conocimiento del medio : 4 Primaria.	Edelvives, D.L.	978-84-263-8330-3	2012	Se expone esta referencia como ejemplo. Señalar que en la biblioteca están disponibles para el préstamo Libros de ESO, Bachiller (Biología y Geología). This reference is given as an example. Note that ESO, Bachelor's (Biology and Geology) Books are available for loan in the library.
Edward J. Tarbuck, Frederick K. Lutgens	Earth : an introduction to physical geology	Pearson	978-1-292-16183-9	2017	
Más Savia	Natural science. 5 Primary.	Ediciones SM	8417061916	2018	
VV.AA	Natural Science: 1 Primary	Santillana	9788468068008	2022	
Raquel Graguera et al.	Conocimineto del medio Castilla-La Mancha. 4 Primaria	SM, D.L.	978-84-675-5488-5	2012	
David Sanz, Esperanza Montero, Mario Sánchez-Gómez, Juan José Gómez-Alday	Geología 19: Geo-Qvijote de la Mancha en Ruidera	Diputación de Albacete	2603-8889	2019	Material de elaboración propia para uso didáctico
	https://iealbacetenses.dipualba.es/details.vm?q=id:0000083309&lang=es&view=mono				
Julián de Mora Moreno, Mario Sanchez Gómez, José Luis Vila Marín, Juan José Gómez-Alday, Santiago Castaño, David Sanz Martínez	Geología 15: Sinclinal Cretácico y Mioceno Marino de Peñas de San Pedro	Diputación de Albacete	AB-208/2015	2015	Material de elaboración propia para uso didáctico
	https://iealbacetenses.dipualba.es/details.vm?q=id:0000013401&lang=es&view=mono				
Del Rey, J. & Calvo, J.R.	Cómo couidar la salud			1997	
Gallegos, J.A.	Nociones de Biología Y Geología para Magisterio	GEU		2002	
Press, F.	Understanding Earth			1996	
Tarbuck, E.J. & Lutgens, F.K.	Ciencias de la Tierra. Una introducción a la Geología Física	Prentice-Hall		2005	
	https://www.osop.com.pa/wp-content/uploads/2014/04/TARBUCK-y-LUTGENS-Ciencias-de-la-Tierra-8va-ed.-1.pdf				
Villee, C.A.	Biología Recursos WEB IGME, USGS, FEMA, etc	McGraw-Hill		2003	
Barber, A.M. & Ponz, F.	Principios de Fisiología Animal	Síntesis		1998	
Bastida, F.	Geología: Una visión moderna de las ciencias de la Tierra	Trea Ciencias		2005	
Weisz, P.B. & Keogh, R.N.	La ciencia de la Biología Libros de ESO, Bachiller (Biología y Geología)	Omega		1987	
Sheldon, J. & Richardson, S.M.	Earth: an introduction to geological change	Prentice-Hall		1995	
Kimball, J.W.	Biología	STEM		1986	
López, V.	Bología y Geología. Ciencias de la Naturalez y de la salud	Edelvives		2002	
Margulis, L. & Schwartz, K.V.	Cinco reinos	Labor		1985	
Pérez, J.	¿Qué abemos del Universo?	Omega		2002	
Planas, J.	Elementos de Biología	Omega		1985	
VVAA	Espacios naturales de Castilla-La mancha	JCCM		1998	
De Barbara, M.	Introducción a la Biología	Omega		1989	
Langley, L.I.	Elementos de Fisiología	Acribia		1982	