UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

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: 2021-22
Center: 101 - FACULTY OF EDUCATION IN ALBACETE
Group(s): 10 11 19 14 17 18
Year: 4
Duration: First semester
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: N
Web site:
Bilingual: Y

Lecturer: **JUAN JOSE GOMEZ ALDAY** - Group(s): **19 17 18**

Building/Office	Department	Phone number	Email	Office hours
Facultad de Educación. Planta baja. Departamento de Geología	INGENIERÍA GEOLÓGICA Y MINERA	967599245	juanjose.gomez@uclm.es	They will be specified at the beggining of the course

Lecturer: **MARÍA ESTHER PAÑOS MARTÍNEZ** - Group(s): **10 11 19 14 17 18**

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Facultad de Educación. Planta baja. Laboratorio de Biología	PEDAGOGÍA	967599200 Ext. 2512	Esther.Panos@uclm.es	

Lecturer: **JOSE REYES RUIZ GALLARDO** - Group(s): **10 11 19 14 17 18**

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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 T*eaching Natural and Social Sciences and Cultural Studies and* 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.
	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is

CB01	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

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.
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.
Recognize the historical Science-Technology-Society influence, assessing their importance and cultural significance
Describe the systems and apparatuses of the human body, especially those related to nutrition.
Identity the basic components of living matter.
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.

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 subject matter.
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.
Progress test [ON-SITE]	Assessment tests	1.2.1.II.01 1.2.1.II.02 CB01 CG09	0.08	2	Y	N	Written test, which may include short or multiplechoice 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%	20.00%	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%	80.00%	Written test, which may include short 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 marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 marks (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, he 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.
Plagiarism policy: see article 9 of Students Evaluation Rules (UCLM).

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 appropiate 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 marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 marks (8 mistakes). If the mistake is repeated, the repetition(s) will be also penalized.
In any type of evaluation, any modification or adaptation necessary in the teaching guides as a consequence of any change in the teaching model or evaluation derived from the evolution of the pandemic will be documented through an addendum.
Plagiarism policy: see article 9 of Students Evaluation Rules (UCLM).

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 appropiate 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 marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 marks (8 mistakes). If the mistake is repeated, the repetition(s) will be also penalized.

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 appropiate 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 marks in the corresponding activity/test/presentation/exam up to a maximum of 1.6 marks (8 mistakes). If the mistake is repeated, the repetition(s) will be also penalized.

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
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	7.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	5.5
Teaching period: september 2021-january 2022	
Group 10:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 11:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 19:	
Initial date: 20-09-2021	**End date:** 14-01-2022

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
Progress test [PRESENCIAL][Assessment tests]	.5
Progress test [PRESENCIAL][Assessment tests]	.5
Progress test [PRESENCIAL][Assessment tests]	.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	7
Teaching period: september 2021-january 2022	
Group 10:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 11:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 19:	
Initial date: 20-09-2021	**End date:** 14-01-2022

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
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	.3

Progress test [PRESENCIAL][Assessment tests]	.3
Study and Exam Preparation [AUTÓNOMA][Self-study]	8
Teaching period: september 2021-january 2022	
Group 10:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 11:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 19:	
Initial date: 20-09-2021	**End date:** 14-01-2022

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
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	.3
Study and Exam Preparation [AUTÓNOMA][Self-study]	8
Teaching period: september 2021-january 2022	
Group 10:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 11:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 19:	
Initial date: 20-09-2021	**End date:** 14-01-2022

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
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	7.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	8.5
Teaching period: september 2021-january 2022	
Group 10:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 11:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 19:	
Initial date: 20-09-2021	**End date:** 14-01-2022

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
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	.3
Progress test [PRESENCIAL][Assessment tests]	7.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	8
Teaching period: september 2021-january 2022	
Group 10:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 11:	
Initial date: 20-09-2021	**End date:** 14-01-2022
Group 19:	
Initial date: 20-09-2021	**End date:** 14-01-2022

Global activity	
Activities	**hours**
Class Attendance (practical) [PRESENCIAL][Lectures]	48
Writing of reports or projects [AUTÓNOMA][Cooperative / Collaborative Learning]	45
Progress 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
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	McGraw-Hill	2003
	Recursos WEB IGME, USGS, FEMA, etc		
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	Omega	1987
	Libros de ESO, Bachiller (Biología y Geología)		
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.	¿Qués 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.l.	Elementos de Fisiología	Acribia	1982