Universitat de Lleida

DEGREE CURRICULUM

LEARNING OF EXPERIMENTAL SCIENCES I

Coordination: IBAÑEZ PLANA, MANUEL

Academic year 2023-24

LEARNING OF EXPERIMENTAL SCIENCES I 2023-24

Subject's general information

Subject name	LEARNING OF EXPERIMENTAL SCIENCES I
Code	100988
Semester	1st Q(SEMESTER) CONTINUED EVALUATION
Typology	

Degree	Course	Character	Modality
Bachelor's Degree in Primary Training	3	COMPULSORY	Attendance-based
Double bachelor's degree: Degree in Pre-school Education and Degree in Primary Training	4	COMPULSORY	Attendance-based

Course number of credits (ECTS)	6
Type of activity, credits, and groups	

Activity type	PRAULA	TEORIA
Number of credits	1.8	4.2
Number of groups	5	4

Coordination	IBAÑEZ PLANA, MANUEL
Department	EDUCATION SCIENCES
Important information on data processing	Consult this link for more information.

LEARNING OF EXPERIMENTAL SCIENCES I 2023-24

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CANELA XANDRI, ANNA	anna.canela@udl.cat	12	
IBAÑEZ PLANA, MANUEL	manel.ibanez@udl.cat	9,8	
SOLE LLUSSA, ANNA	anna.sole@udl.cat	4	

Subject's extra information

The Didactics of Experimental Sciences I is a compulsory subject that introduces the fundamental didactic knowledge for science education. This set of knowledge should allow students to plan well-founded classroom interventions aimed at promoting both the construction of scientific knowledge and the active research of boys and girls.

Learning objectives

The course emphasizes the scientific ideas that must be worked with the primary school students (what we will call school science content), and how to approach the teaching-learning process as an activity that integrates inquiry, modeling and communication.

The objectives of the subject are:

Acquire a vision of science and scientific activity well founded epistemologically.

Become familiar with scientific activity by actively participating in short research.

To form a didactic model focused on the active investigation of boys and girls and on the processes of conceptual evolution, and to use it in the planning of sequences of activities.

Know the contents and curricular orientations of the Natural Environment area

Know, propose and evaluate activities to promote the development of scientific competence in primary school.

Competences

The competences to be developed in the subject "Learning Experimental Sciences I" are the following:

Basic Competences

BC1. Possess and understand knowledge in an area of study -Education- that starts from the base of general secondary education, and is usually found at a level that, although it is supported by advanced textbooks, also includes some aspects that imply knowledge coming from the forefront of your field of study.

General Competences

GC1. To promote democratic values, with special emphasis on tolerance, solidarity, justice and non-violence, and to know and value human rights.

GC2. Know the intercultural reality and develop attitudes of respect, tolerance and solidarity towards different social and cultural groups.

GC3. Know the right to equal treatment and opportunities between women and men, in particular by eliminating discrimination against women, whatever their circumstance or condition, in any of the areas of life.

GC4. Know the measures that guarantee and make effective the right to equal opportunities for people with disabilities.

GC5. Develop the ability to critically analyze and reflect on the need to eliminate all forms of discrimination, direct or indirect, in particular racial discrimination, discrimination against women, that derived from sexual orientation or that caused by a disability.

GC6. Assume the commitment of personal and professional development with oneself and the community. Adapt the learning proposals to the most significant cultural evolutions.

Specific Competences

SC2. Design, plan and evaluate teaching and learning processes, both individually and in collaboration with other teachers and professionals at the center.

Transversal Competences

TC5. Apply essential notions of scientific thought

Subject contents

1. The nature of science. Implications for school science to Primary education.

Characteristic processes of scientific activity. Questions in science. Generate data and establish facts. Elaborate explanations. Models and modeling.

2. Learn science in primary education. Matter and energy. Physical processes and chemical changes

3. Learn science in primary education. Health and human body. Keep them alive. Changes and evolution.

Methodology

The teaching methodology and the proposed evaluation may undergo some modification depending on the restrictions on attendance that the health authorities impose.

TEORIA group sessions:

Presentations by the teaching staff of the content and basic issues on the agenda. It is carried out with the whole class group and allows the exhibition of the main contents through open and active participation by the students. Activities are included that can be done individually, in pairs or in small groups and are shared in the class group.

This year these sessions will be mostly virtual.

PRAAULA group sessions:

Small group work spaces supervised by the teaching staff aimed at delving into the content and topics worked on in the large group.

Tutorials:

Tutorials for solving doubts, preparing for written tests. Exam reviews.

Student work:

Preparation of activities, search for information and materials, study and preparation of tests, readingsPreparation of activities, search for information and materials, study and preparation of tests, readings

Development plan

SCHEDULE: LEARNING ACTIVITIES

Indicative planning of classroom sessions

DESCRIPTION	DURATION/WEEKS	OBJETIVES	STUDENT'S TASKS	% EVALUATION
Inquiry	1 -7	Introduction to research at Primary school	Video analysis of scientific practices Planning and conducting inquiries	50
Model Matter and Energy	8 - 15	Construction of this model Introduction to its didactic application	Diary, exercises and other activities Planning	50

Evaluation

DUAL GROUP MORNING

BLOCK 1 . SCHOOL SCIENCE ENQUIRY (25%) (Group)

1.1. Inquiry project

BLOCK 2. CLASSROOM PRODUCTIONS (25%) (Individual)

2.1. Video analysis

2.2. Solar still

2.3. Rain gauge

2.4. Combustion

BLOCK 3. FINAL WRITTEN EXAM (INCLUDES BLOCK 1 AND 2) (50%)

Written exam (50%) - individual

In order to weight this block 3 in the overall mark, a minimum of 30% must be obtained in the written exam.

DUAL AFTERNOON GROUP

1. Project 'Science at school' 30% (Individual)

2. Classroom productions 25% (Individual)

3. Final test 45% (Individual)

BILINGUAL GROUP

1. Solve with inquiry 30% Individual

2. Science Corner - Inquiry activity: 30 % Workgroups

3. Final exam 40 % Individual

In order to pass the course, students must have an average mark of 5 or more in the three blocks.

In accordance with the University of Lleida's Teaching Assessment and Qualification regulations, the blocks with a value higher than 30% have the right to a make-up exam. Students will have 15 days from the date of publication of the marks to retake the course.

Alternative assessment

Students who wish to take the alternative assessment must present a work contract or justify, in writing to the Dean, the reasons that make it impossible for them to take the continuous assessment within five (5) days of the beginning of the four-month period. For further information, please send an e-mail to fepts.secretariacentre@udl.cat or contact the Academic Secretary of the Faculty of Education, Psychology and Social Work. The assessment will consist of a single written test covering the content of the course available on the Virtual Campus (Resources).

Students with NESES

For students with specific support needs for higher education (NESES), the relevant adaptations of the blocks will be made in accordance with the indications provided by the UdLxTothom programme.

Academic failure

In the case of academic fraud or spontaneous copying, the provisions of the Regulations on the assessment and grading of teaching in the UdL's bachelor's and master's degrees and master's degrees will be applied.

Bibliography

GENÉ, A. et al. 2007. Pensar, que bé! Com acompanyar els infants a descobrir el món. Lleida: Pagès.

MARTÍ, J. 2012. *Aprendre ciències a l'educació primària*. Barcelona: Graó

MORIN, E. 2001. Los siete saberes necesarios para la educación del futuro. Paidós.

PUJOL, R. M. 2003. Didáctica de las Ciencias en la Educación Primaria. Síntesis.

Webs d'interès

CESIRE-CDEC.

Aplicació de Recursos al Curriculum

Planting Science

Teachingchannel

Annenberg Learner

National Science Teacher Association

Natonal STEM Center

Primary Science Teachers TV