

Caraterização da Unidade Curricular / Characterisation of the Curricular Unit

Designação da Unidade Curricular / Curricular Unit:	[3181300260] Didáticas Específicas da Matemática e das Ciências Naturais no 2.º CEB II		
	[3181300260] Didactics of Mathematics and Natural Sciences (5th and 6th grades) II		
Plano / Plan:	2015/2016		
Curso / Course:	Ensino do 1.º Ciclo do Ensino Básico e de Matemática e Ciências Naturais no 2.º Ciclo do Ensino Básico		
Grau / Diploma:	Mestre		
Departamento / Department:	CEN - Ciências Exatas e Naturais		
Unidade Orgânica / Organic Unit:	Escola Superior de Educação de Viseu		
Área Científica / Scientific Area:	Didáticas Específicas		
Ano Curricular / Curricular Year:	2		
Período / Term:	S2		
ECTS:	6		
Horas de Trabalho / Work Hours:	0162:00		
Horas de Contacto/Contact Hours:			
(T) Teóricas/Theoretical:	0000:00	(TC) Trabalho de Campo/Fieldwork:	0000:00
(TP) Teórico-Práticas/Theoretical-Practical:	0075:00	(OT) Orientação Tutorial/Tutorial Orientation:	0000:00
(P) Práticas/Practical:	0000:00	(E) Estágio/Internship:	0000:00
(PL) Práticas Laboratoriais/Practical Labs:	0000:00	(O) Outras/Others:	0000:00
(S) Seminário/Seminar:	0000:00		

Docente Responsável / Responsible Teaching

[48416] Ana Patrícia Morais Da Fonseca Martins

Outros Docentes / Other Teaching

[2012] Anabela Clara Barreto Marques Novais

[48416] Ana Patrícia Morais da Fonseca Martins

Learning Outcomes of the Curricular Unit

1. Mobilize and integrate knowledge and experience in Mathematics, Natural Sciences and other areas of training into teaching and learning.
2. Analyze curricula and school programs in Mathematics and Natural Sciences and plan teaching practice.
3. Analyze teaching practices and learning processes of students in Mathematics and Natural Sciences, focusing on teacher and student roles, mathematical tasks, and experimental activities in Natural Sciences, as well as communication and interactions in the classroom.
4. Evaluate textbooks and other teaching resources.
5. Work autonomously and in collaboration with other professionals, from a training and professional development perspective.

Learning Outcomes of the Curricular Unit (Lim:1000)

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Syllabus (Lim:1000)

1. The Mathematics and Natural Sciences programmes of the 2nd CEB The importance of problem solving, research activities and experimental activities.
2. The dynamics of Mathematics and Natural Sciences classes: ? Roles of the teacher and the student in teaching and learning ? Nature and role of tasks; ? Communication and argumentation, forms of organization and management of classroom work; ? Assessment of learning; ? Nature and role of teaching resources.
3. Didactics of disciplinary content: the curricular contents of Mathematics and Natural Sciences of the 2nd CEB: - Preparation of knowledge for teaching; - Design and analysis of learning situations; - Planning and evaluation of teaching practice.

Demonstration of the syllabus coherence with the curricular units' learning objectives

This curricular unit of Didactics, which follows the previous didactics, in particular the Specific Didactics of Mathematics and Natural Sciences in the 2nd CEB I, aims to provide students with didactic knowledge that allows them to think, in an increasingly in-depth way, about what it is to teach Mathematics and Natural Sciences in the 2nd cycle of basic education and to be able to plan, teaching and reflecting on teaching and learning activities.

Teaching Methodologies (Including evaluation; Lim:1000)

The development of the work in this curricular unit presupposes: (a) presentation and discussion of episodes of practice and their connection with research (working with different internship groups); (ii) preparation of classes according to what is being taught in the PES (working in groups, internship); and (c) Elaboration and presentation of a curricular articulation work (Mathematics and Natural Sciences in the 2nd CEB). The evaluation considers all the work of the students in the classes and the preparation and presentation of a written work of curricular articulation (carried out by internship groups), as follows: curricular articulation work ? 65%; Class participation ? 35%.

Demonstration of the coherence between the teaching methodologies and the learning outcomes

The work carried out in this curricular unit intends to feed the unit of Professional Teaching Practice, which occurs in parallel, and also to be fed by it with didactic problems that emerge from practice. In this way, we try to go from theory to practice and from this, again, to theory. In addition and given that this is the last Didactics of the course, it is intended that students are able to design and implement curricular articulation projects between the subjects of Mathematics and Natural Sciences of the 2nd cycle of basic education.

Bibliografia / Bibliography (Lim:1000)

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Ponte, J. P., Brocardo, J., & Oliveira, H. (2019). *Investigações matemáticas na sala de aula* (4.ª edição). Lisboa: Autêntica.

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