



1. General information

Course: DEVELOPMENT OF LOGICAL AND NUMERICAL THINKING IN EARLY CHILDHOOD EDUCATION

Code: 47317

Type: CORE COURSE

ECTS credits: 6

Degree: 304 - UNDERGRADUATE DEGREE IN EARLY CHILDHOOD EDUCATION

Academic year: 2022-23

Center: 104 - FACULTY OF EDUCATION OF TOLEDO

Group(s): 43

Year: 2

Duration: First semester

Main language: Spanish

Second language: English

Use of additional languages:

English Friendly: Y

Web site:

Bilingual: N

Lecturer: RAQUEL FERNANDEZ CEZAR - Group(s): 43

Building/Office	Department	Phone number	Email	Office hours
Fac. De Educación, despacho 1.35 Edificio Sabatini	MATEMÁTICAS	926051807	raquel.fcezar@uclm.es	

2. Pre-Requisites

Not established

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

Not established

4. Degree competences achieved in this course

Course competences

Code	Description
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
CG01	Know the objectives, curricular contents, and evaluation criteria for Early Childhood Education.
CG11	Reflect upon the practices of the classroom to innovate and improve the teaching process. Acquire habits and skills for autonomous and co-operative learning and encourage them in the pupils.
CT02	Mastery of Information and Communication Technology (ICT).
CT03	Correct oral and written communication.

5. Objectives or Learning Outcomes

Course learning outcomes

Description
Construct the mathematical training necessary to allow one to have a deep knowledge of the basic mathematical contents that are included in the curriculum for Early Childhood Education.
Know and exemplify the interdisciplinary and constructive character of mathematics and the utility of mathematical knowledge.
Acquire the capacity to consult and analyse documents regarding the mathematical curriculum for Early Childhood Education and the investigations performed in this field.
Develop a critical and investigative spirit and develop the capacity to express the results thereof with clarity, precision, and rigor.
Know and acquire skills in the utilisation of the usual material means and resources in the teaching-learning process as it relates to mathematics in Early Childhood Education.
Show ability in use of software adequate for mathematics in Early Childhood Education.
Design, apply, and evaluate activities and materials that develop logical and numerical thinking.
Comprehend, relate, analyse, and apply the necessary methodological strategies so as to develop numerical concepts and logical thinking.

Additional outcomes

6. Units / Contents

Unit 1:

Unit 2:

Unit 3:

Unit 4:

Unit 5:

Unit 6:

7. Activities, Units/Modules and Methodology

	Related Competences					
--	---------------------	--	--	--	--	--

Training Activity	Methodology	(only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Analysis of articles and reviews [OFF-SITE]	Self-study	CB03 CB04 CG11 CT03	1	25	Y	Y	
Class Attendance (theory) [ON-SITE]	Lectures	CB02 CB03 CB04 CG01 CG11 CT02 CT03	1.32	33	Y	Y	
Writing of reports or projects [OFF-SITE]	Group Work	CB02 CB03 CB04 CG01 CG11 CT02 CT03	2.6	65	Y	Y	
Project or Topic Presentations [ON-SITE]	Case Studies	CB03 CB04 CG01 CG11 CT03	1	25	Y	Y	
Final test [ON-SITE]	Assessment tests	CB02 CB03 CB04 CG01 CG11 CT02 CT03	0.08	2	Y	Y	
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
Theoretical papers assessment	10.00%	10.00%	
Oral presentations assessment	10.00%	10.00%	
Final test	70.00%	80.00%	
Assessment of active participation	10.00%	0.00%	
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).

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Final test [PRESENCIAL][Assessment tests]	2
Unit 1 (de 6):	
Activities	Hours
Analysis of articles and reviews [AUTÓNOMA][Self-study]	5
Class Attendance (theory) [PRESENCIAL][Lectures]	6
Writing of reports or projects [AUTÓNOMA][Group Work]	12
Writing of reports or projects [AUTÓNOMA][Group Work]	5
Unit 2 (de 6):	
Activities	Hours
Analysis of articles and reviews [AUTÓNOMA][Self-study]	5
Class Attendance (theory) [PRESENCIAL][Lectures]	6
Writing of reports or projects [AUTÓNOMA][Group Work]	13
Writing of reports or projects [AUTÓNOMA][Group Work]	5
Unit 3 (de 6):	
Activities	Hours
Analysis of articles and reviews [AUTÓNOMA][Self-study]	5
Class Attendance (theory) [PRESENCIAL][Lectures]	6
Writing of reports or projects [AUTÓNOMA][Group Work]	12
Writing of reports or projects [AUTÓNOMA][Group Work]	5
Unit 4 (de 6):	
Activities	Hours
Analysis of articles and reviews [AUTÓNOMA][Self-study]	5
Class Attendance (theory) [PRESENCIAL][Lectures]	7
Writing of reports or projects [AUTÓNOMA][Group Work]	14
Writing of reports or projects [AUTÓNOMA][Group Work]	5
Unit 5 (de 6):	
Activities	Hours
Analysis of articles and reviews [AUTÓNOMA][Self-study]	5
Class Attendance (theory) [PRESENCIAL][Lectures]	8
Writing of reports or projects [AUTÓNOMA][Group Work]	14
Writing of reports or projects [AUTÓNOMA][Group Work]	5
Global activity	
Activities	hours
Analysis of articles and reviews [AUTÓNOMA][Self-study]	25
Writing of reports or projects [AUTÓNOMA][Group Work]	65

Class Attendance (theory) [PRESENCIAL][Lectures]	33
Final test [PRESENCIAL][Assessment tests]	2
Total horas: 125	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	City	ISBN	Year	Description
Muñoz-Catalán, María Cinta, y Yáñez, José CarrilloC. (Eds.)	Didáctica de las matemáticas para maestros de Educación Infantil	Paraninfo			2018	Ediciones Paraninfo
BAROODY A. J	"El pensamiento matemático de los niños"	VISOR				
CHAMORRO, C. Y OTROS.	"Didáctica de las matemáticas para la educación infantil"	PEARSON PRENTICE HALL	MADRID		2005	
DEAÑO, M.	"Conocimiento lógico-matemáticos en la escuela infantil: desarrollo, diseño y observación"	CEPE	MADRID		1993	
FERNANDEZ BRAVO, J.A.	"Didáctica de la Matemática en la educación infantil"	EDICIONES PEDAGÓGICAS	MADRID		1995	
Fernández Bravo, José Antonio	Desarrollo del pensamiento lógico y matemático : el concepto	Grupo Mayéutica-Educación,		978-84-934954-4-2	2012	
LAHORA, C.	"Actividades matemáticas con niños de 0 a 6 años"	NARCEA	MADRID		1996	
MAZA, C.	"Conceptos y numeración en educación infantil"	SINTESIS			1991	
Cannals, M. Antonia	Vivir las matemáticas	Octaedro		97884806349	2013	Las matemáticas en la vida cotidiana de los niños y niñas y los juegos matemáticos en la escuela conforman el enfoque del libro, y permiten conocer, y sobre todo descubrir, a partir de las múltiples actividades posibles, los diversos conceptos matemáticos que los niños de estas edades pueden hacer suyos
ALSINA I PASTELLS, A	https://www.octaedro.com/es/producto:Cos/1/ensenar/temas-de-infancia/vivir-las-matematicas/479 "Como desarrollar el pensamiento matemático de 0 a 6 años"	Octaedro-Eumo			2006	Aprender para enseñar es la premisa fundamental de este manual que, lejos de pretender erigirse en un tratado de educación lleno de dogmas metodológicos o de teorías de aprendizaje, quiere dar pautas a los maestros de Educación Infantil para que enseñen las matemáticas en una etapa en que esta materia parece desdibujarse entre el resto de áreas curriculares. El libro consta de dos partes: la primera, «Desarrollo del pensamiento matemático», se ocupa de cómo aprendemos y analiza las principales corrientes de enseñanza de las matemáticas que existen para estas edades tempranas; la segunda, «Consideraciones didácticas y metodológicas», se dedica a la acción en el aula o en el marco de cualquier situación de aprendizaje
Blanca Arteaga y J. Macías	Didáctica de las matemáticas en educación infantil	UNIR		978-84-16602-25-4	2016	