



Universitat de Lleida

DEGREE CURRICULUM

LEARNING MATHEMATICS

Coordination: RICART ARANDA, MARIA

Academic year 2020-21

Subject's general information

Subject name	LEARNING MATHEMATICS			
Code	100759			
Semester	1st Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Pre-School Education	3	COMPULSORY	Attendance-based
	Double bachelor's degree: Degree in Pre-school Education and Degree in Primary Training	3	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	4		3
Coordination	RICART ARANDA, MARIA			
Department	MATHEMATICS			
Important information on data processing	Consult this link for more information.			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
ESTRADA ROCA, MA ASSUMPTA	assumpta.estrada@udl.cat	1,8	
RICART ARANDA, MARIA	maria.ricartaranda@udl.cat	18	

Learning objectives

LEARNING OBJECTIVES

1. Acquire fundamental mathematical knowledge to understand the world.
2. Reason and communicate the school mathematics.
3. Know the school curriculum.
4. Know and apply mathematical and didactic aspects of logic, numeration, calculus, geometry, measurement, statistics and probability.
5. Manage the appropriate information and use it in the design and assessment of learning units.
6. Critically incorporate innovation and educative technology in the teaching practice.
7. Cooperatively solve tasks of study content and school learning.
8. Become aware of the own teaching practice.
9. Become aware of the formative assessment in mathematics.

Competences

SIGNIFICANT COMPETENCES

1. Acquire basic mathematical skills on logic, numeration, calculus, geometry, measurement, statistics and probability.
2. Develop and evaluate the curriculum contents by means of appropriate didactic resources.
3. Value mathematics as a cultural fact.
4. Value the relationship between mathematics and sciences as one of the pillars of scientific thinking.
5. Analyse, reason and communicate mathematical teaching proposals.
6. Raise and solve mathematical problems related to everyday life.
7. Connect mathematical concepts.
8. Adapt the mathematical learning proposals to the most significant cultural evolutions.
9. Reflect on the classroom practices in order to innovate and improve the teaching.
10. Acquire habits and skills for an independent and cooperative learning.
11. Correct oral and written communication.
12. Reflect on the classroom practice to innovate and improve the teaching.

Subject contents

SUBJECT CONTENTS

1. Construction and assessment of the pre-school mathematical knowledge.
2. The mathematical school curriculum in pre-school education.
3. Logic.
4. Notion of quantity, numbers and operations.
5. Measurement.

6. Geometry.
7. Statistics and Probability.

Themes 1 and 2 will be worked on transversally with the other themes.

Methodology

CLASSROOM HOURS

- Exposition of the subject's content, discussion with students and workshops related to the theory contents.
- Workshops with manipulative resources.

VIRTUAL HOURS

- Exposition of the subject's content
- Study of the theoretical and practical contents.
- Do recommended tasks.
- Compulsory tasks.
- Group Works.

NON-CLASSROOM HOURS

- Study of the theoretical and practical contents.
- Carrying out consolidation tasks.
- Perform recommended tasks.
- Completion of group assessment work.
- Readings of the recommended texts and elaboration of the related tasks.

Development plan

WEEK	DESCRIPTION	CLASS TASKS	HOMEWORK
1	<ul style="list-style-type: none"> • Introduction 		<ul style="list-style-type: none"> • Writing
1-6	<ul style="list-style-type: none"> • Logic • Notion of quantity, numbers and operations 	<ul style="list-style-type: none"> • Classroom activities • Workshops 	<ul style="list-style-type: none"> • Recommended activities. • Study of the theoretical and practical contents. • Joc Heurístic and Panera dels Tresors Activities • Problem solving • Article reading
6-8	<ul style="list-style-type: none"> • Notion of quantity, numbers and operations 	<ul style="list-style-type: none"> • Classroom activities • Workshops 	<ul style="list-style-type: none"> • Problem solving • Recommended activities • Study of the theoretical and practical contents

8-11	<ul style="list-style-type: none"> • Measurement 	<ul style="list-style-type: none"> • Classroom activities 	<ul style="list-style-type: none"> • Recommended activities • Study of the theoretical and practical contents
9	CONTROL EXAM		
11-13	<ul style="list-style-type: none"> • Geometry 	<ul style="list-style-type: none"> • Classroom activities • Workshops 	<ul style="list-style-type: none"> • Recommended activities • Study of the theoretical and practical contents
12	PRESENTATION DIDACTIC VIDEO		
14-15	<ul style="list-style-type: none"> • Data analysis and probability 	<ul style="list-style-type: none"> • Classroom activities 	<ul style="list-style-type: none"> • Recommended activities • Study of the theoretical and practical contents
16	FINAL EXAM		
17	PRESENTATION MiniDU		
18	RESIT EXAM		

Evaluation

ACTIVITY	DEGREE	APPROXIMATE DATE	PLACE AND FINAL DATE
Control Exam	GESTIONS CREATIVES TARDA DOUBLE DEGREE	From 16 to 20 November 2020	Consult UdL Virtual Campus
Group task: Didactic Video	TARDA	From 9 to 11 December 2020	Consult UdL Virtual Campus
Final Exam	GESTIONS CREATIVES TARDA DOUBLE DEGREE	From 18 to 22 January 2021	Consult UdL Virtual Campus
Group task MiniDU	GESTIONS CREATIVES TARDA DOUBLE DEGREE	From 25 to 29 January 2021	Consult UdL Virtual Campus
Resist Exam	GESTIONS CREATIVES TARDA DOUBLE DEGREE	From 1 to 5 February 2021	Consult UdL Virtual Campus

1. To pass the course, the final grade must be greater or equal to 5 and the final exam grade must be

greater or equal to 5.

2. If the final exam grade **is equal or superior to 5**, the final grade of the course will be the following:

$$\text{Control exam grade} \times 0.2 + \text{final exam grade} \times 0.45 + \text{video grade} \times 0.15 + \text{MiniUD grade} \times 0.2$$

3. If the final exam grade **is lower than 5**, the student may perform a resist exam.

Resist exam

The resist exam will be assessed on 10 points. At least five points must be scored to pass. However, the final grade of the resist exam will be as follows (Table 2):

Table 2. Final grade of the resist exam

Points of the resist exam over 10	Final grade of the resist exam	Final exam grade_2
[5,7)	5	5
[7,8'5)	5'5	5'5
[8'5, 10]	6	6

- If the points of the resist exam over 10 points **are less than 5**, the student will fail the course and, the final grade of the course will be calculated as follows:

$$\text{Control exam grade} \times 0.2 + \max\{\text{final exam grade}, \text{final exam grade}_2\} \times 0.45$$

- If the grade of the resist exam over 10 points **is equal or superior to 5**, the final grade of the course will be calculated as follows:

$$\text{Control exam grade} \times 0.2 + \text{Final exam grade}_2 \times 0.45 + \text{video grade} \times 0.15 + \text{MiniUD grade} \times 0.2$$

To pass the course, the final grade must be greater or equal to 5.

4. Alternative evaluation

ALTERNATIVE EVALUATION			
ACTIVITY	DEGREE	APROXIMATE DATE	PLACE AND FINAL DATE
FINAL EXAM	GESTIONES CREATIVAS TARDE DOUBLE DEGREE	From 18 to 22 January 2021	Consult Campus Virtual
INDIVIDUAL TASK: DU	GESTIONS CREATIVES TARDA DOUBLE DEGREE	From 18 to 22 January 2021	Consult Campus Virtual

- The final grade of the course will be calculated as follows:

$$\text{Exam grade} \times 0.75 + \text{work grade} \times 0.25$$

To pass the course, the final grade must be greater or equal to 5 and the exam grade must be greater or equal to 5.

5. Other questions

- It's compulsory to deliver all evaluative activities on the final date.
- If plagiarism or little originality is detected in a work, it will appear that it has not been presented.
- If the final exam grade is equal or greater than 9, it could be *m.h.*
- In order to be able to take an exam, the student's card must be submitted to the teacher by the beginning of the course.
- In hours of class, the teacher will give more details on the work to deliver.
- In the virtual campus, it will be informed, as soon as possible, of the definitive dates of the activities.
- In the virtual campus, you will find the information about the work to be delivered once you have been informed in the classroom.

Bibliography

- Alsina, A. (2004). *Com desenvolupar el pensament matemàtic de 0 a 6 anys*. Propostes didàctiques. Ed. Eumo. Vic
- Alsina, A. (2011). *Educación Matemática en contexto: de 3 a 6 años*. Barcelona: Horsori
- Alsina, A. Planas, N. (2009). *Educación matemática y buenas prácticas*. Ed. Graó.
- Alsina, C. (2000). *Estimar les matemàtiques*. Barcelona: Columna.
- Alsina, C y d'altres (1995). *Ensenyar matemàtiques*. Barcelona: Graó.
- Arce, M., Conejo, L. & Muñoz, J.M. (2019). *Aprendizaje y enseñanza de las matemáticas*. Editorial Síntesis.
- Arteaga, B. & Macías, J. (2016). *Didáctica de las matemáticas en Educación Infantil*. Logroño: Unir Editorial.
- Biniés, P.(2008). *Converses matemàtiques amb M. Antònia Canals*. Barcelona: Graó.
- Canals M. A (2000). *Viure les matemàtiques de 3 a 6 anys*. Barcelona: Rosa Sensat.
- Canals M. A. (2009). *Primers nombres i primeres operacions*. Barcelona: Rosa Sensat.
- Canals M. A. (2009). *Lògica a totes les edats*. Barcelona: Rosa Sensat.
- Canals M. A. (2009). *Mesures i geometria*. Barcelona: Rosa Sensat.
- Clements, D. & Sarama, J. (2015). *El aprendizaje y la Enseñanza de las Matemáticas a Temprana Edad: El Enfoque de las Trayectorias de Aprendizaje*. Learning Tools LLC.
- Chamorro, M.C. (Coord.) (2005). *Didáctica de la matemática en Ed. Infantil*. Madrid: Pearson
- Departament d'Ensenyament. (2008). *Currículum Ed. Infantil*. Barcelona: Generalitat de Catalunya
- Muñoz-Catalán, M. C. & Carrillo, J. (Coord.) (2018). *Didáctica de las matemáticas para maestros de Educación Infantil*. Madrid: Paraninfo, S. A.
- National Council of Teachers of Mathematics (NCTM). (2020). *Principios y estándares para la*

educación matemática. Sevilla: Sociedad Andaluza de Educación Matemática Thales.

<http://www.ugr.es/~jgodino/edumat-maestros/welcome.htm>

<http://www.xtec.cat/>

<http://clic.xtec.cat/ca/act/index.htm>

<http://www.edu365.cat/primaria/muds/matematiques/index.htm>

http://www.edu3.cat/Edu3tv/Cerca?p_amb=4021

<http://nlvm.usu.edu/es/nav/vlibrary.html>