

## DEGREE CURRICULUM LEARNING MATHEMATICS

Coordination: RICART ARANDA, MARIA
Academic year 2023-24

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 PreSchool Education |  | 3 | COMPULSORY | Attendancebased |
|  | Double bachelor's degree: <br> Degree in Pre-school Education and Degree in Primary Training |  | 3 | COMPULSORY | Attendancebased |
| 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 | 3 |  | 3 |  |
| Coordination | RICART ARANDA, MARIA |  |  |  |  |
| Department | MATHEMATICS |  |  |  |  |
| Important information on data processing | Consult this link for more information. |  |  |  |  |
| Language | Catalan |  |  |  |  |

## LEARNING MATHEMATICS 2023-24

| Teaching staff | E-mail addresses | Credits <br> taught by <br> teacher | Office and hour of attention |
| :--- | :--- | :--- | :--- |
| RICART ARANDA, MARIA | maria.ricartaranda@udl.cat | 18 | Office 3.15 FEPTS <br> Tuesday and Wednesday, 17-19h <br> (to be agreed) <br> Face-to-face attention |

## 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 appropiate 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

CG1 Correct oral and written communication.
CG3 Command of Information and Communication Technologies.
CG7 Manage the appropriate information for the development of the functions of the profession. Knowing and understanding the changing social reality in which he develops his educational work. Recognize changes in society and know how to evolve with them. Know how to change.

CE1 Know the objectives, curricular content and evaluation criteria of Early Childhood Education.
CE3 Design and regulate learning spaces in diverse contexts that meet the unique educational needs of students, gender equality, equity and respect for human rights.

CE5 Reflect in a group on the acceptance of norms and respect for others. Promote the autonomy and uniqueness of each student as factors in the education of emotions, feelings and values in Early Childhood.

CE11 Reflect on classroom practices to innovate and improve teaching. Acquire habits and skills for autonomous and cooperative learning and promote it in students.

## Subject contents

## SUBJECT CONTENTS

1. Mathematics learning

- Construction and assessment of the early childhood mathematical knowledge.
- The mathematical school curriculum in early childhood education.
- Mathematical processes in early childhood education.

2. Early algebra
3. Numbers and operations: Notion of quantity, numbers and operations.

## LEARNING MATHEMATICS 2023-24

4. Measurement.
5. Geometry.
6. Statistics and Probability.

Thema 1 will be worked on transversally with the other themes.

## Methodology

The subject will be carried out in person. In the event that virtuality is to be returned, students will be required to activate the camera during class hours.

## CLASSROOM HOUR

- Exposition of the subject's content
- Exposition and discussion of students' work.
- Practical activities (analysis of didactic proposals, tasks, problem solving, workshops with manipulative resources ...)

NOTE: For the workshops, students must bring different materials from home. For example:

- caps (from bottles...) of different colors and sizes (month of September)
- macaroni (month of October)
- containers of different shapes (boxes of cookies, colognes, creams, jars ...) (month November / December)
- plasticine, paint ...


## NON-CLASSROOM HOURS

- Study of the theoretical and practical contents.
- Carrying out assessment tasks in a group.
- Carrying out tasks (of consolidation, recommendation...)
- Readings of the recommended texts and elaboration of the related tasks.


## Development plan

Orientation development plan

| WEEK | DESCRIPTION | CLASS TASKS | HOMEWORK |
| :---: | :---: | :---: | :---: |
| 1 | Introduction | Participation in classroom tasks | - Writing |
| 1-6 | - Early algebra <br> - Notion of quantity, numbers and operations | Participation in classroom tasks | - Recommended activities. <br> - Study of the theorical and practical contents. <br> - Joc Heurístic and Panera dels Tresors Activities <br> - Problem solving <br> - Article reading |


| 6-8 | Notion of quantity, numbers and operations | Participation in classroom tasks | - Problem solving <br> - Recommended activities <br> - Study of the theorical and practical contents |
| :---: | :---: | :---: | :---: |
| 6 | CONTROL EXAM |  |  |
| 9-11 | Measurement | Participation in classroom tasks | - Recommended activities <br> - Study of the theorical and practical contents |
| 10 | PRESENTATION PATTERNS ACTIVITY |  |  |
| 11-14 | Geometry | Participation in classroom tasks | - Recommended activities <br> - Study of the theorical and practical contents |
| 14-15 | Data analysis and probability | Participation in classroom tasks | - Recommended activities <br> - Study of the theorical and practical contents |
| 15 | PRESENTATION SA |  |  |
| 16 <br> Period of activities assessment (According to the exam calendar of the faculty) | FINAL EXAM |  |  |
| Period of activities assessment (According to the exam calendar of the faculty) | RESIT EXAM |  |  |


| ACTIVITY | DEGREE | APPROXIMATE DATE | PLACE AND FINAL DATE |
| :---: | :---: | :---: | :---: |
| BLOCK 1: Control Exam (15\%) | GESTIONS <br> CREATIVES <br> TARDA <br> DOUBLE DEGREE | From 16 to 20 October 2023 | Consult UdL Virtual Campus and evidence calendar |
| BLOCK 2: Patterns activity (20\%) (Group task) | GESTIONS <br> CREATIVES <br> TARDA <br> DOUBLE DEGREE | From 13 November to 17 November 2023 | Consult UdL Virtual Campus and evidence calendar |
| BLOCK 3: Learning situation(SA)(20\%) (Group task) | GESTIONS <br> CREATIVES <br> TARDA <br> DOUBLE DEGREE | From 18 December to 22 December 2023 | Consult UdL Virtual Campus and evidence calendar <br> http://www.educacioinfantil.udl.cat/ca/ |
| BLOCK 4: Final Exam (45\%) | GESTIONS <br> CREATIVES <br> TARDA <br> DOUBLE DEGREE | Period of activities assessment (According to the exam calendar of the faculty) | Consult UdL Virtual Campus and exam calendar |
| BLOCK 4': Resist Exam (45\%) | GESTIONS <br> CREATIVES <br> TARDA <br> DOUBLE DEGREE | Period of activities assessment (According to the exam calendar of the faculty) | Consult UdL Virtual Campus and exam calendar <br> http://www.educacioinfantil.udl.cat/ca/ |

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:

Control exam grade $\times 0.15+$ final exam grade $\times 0.45+$ patterns activity grade $\times 0.2+S A$ 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 is passed with a 5.

- The maximum grade for a resist exam is a 5 .
- If the points of the resist exam over 10 points are less than 5 , the student will fail the course.
- If the resist exam is passed, the final grade* for the subject will be:

Control exam grade $\times 0.15+5 \times 0.45+$ patterns activity grade $\times 0.2+S A$ 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 |
| BLOCK 1: FINAL EXAM (75\%) <br> BLOCK 1': RESIST EXAM <br> (75\%) | GESTIONS <br> CREATIVES <br> TARDA <br> DOUBLE <br> DEGREE | Period of activities assessment (According to the exam calendar of the faculty) | Consult Campus Virtual |
| BLOCK 2: Learning situation (25\%) (Group task) | GESTIONS <br> CREATIVES <br> TARDA <br> DOUBLE <br> DEGREE | Period of activities assessment (According to the exam calendar of the faculty) | Consult Campus Virtual |

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

Exam grade $\times 0.75+$ 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 .

- If the final exam grade is lower than $\mathbf{5}$, the student may perform a resist exam.


## Resist exam

-The resist exam is passed with a 5.

- The maximum grade for a resist exam is a 5 .
- If the points of the resist exam over 10 points are less than 5 , the student will fail the course.
- If the resist exam is passed, the final grade for the subject will be:

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

To pass the course, the final grade must be greater or equal to 5 .
5. Students who repeat the subject must do all assessment activities.

## 6. Other questions

- Exams will be face-to-face in the university.
- It's compulsory to deliver all evaluative activities on the final date.
- If plagiarism is detected in a work, Llei $2 / 2022$ de convivència universitària and Normativa de Convivència de la UdL will be applied.
- Work submitted outside the deadline will be graded with a 0.
- Linguistic correction in the works will be assessed.
- Activities of Blocks 2 and 3 must be delivered in print to the classroom and also to the Virtual Campus.
- If the final exam grade is equal or greater than 9, it could be m.h.


## LEARNING MATHEMATICS 2023-24

- The active and solid participation in the classroom during the classes can help to achieve the final grade of the student*.
- 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.
- It is complied with the support measures for the students with NEE.


## Bibliography

Alsina, À. (2004). Com desenvolupar el pensament matemàtic de 0 a 6 anys. Propostes didàctiques. Ed. Eumo. Vic

Alsina, À. (2011). Educación Matemática en contexto: de 3 a 6 años. Barcelona: Horsori
Alsina, À. (2022). Itinerarios didácticos para la enseñanza de las matemáticas (3-6 años). Barcelona (ESP): Graó.

Alsina, A. Planas, N. (2009). Educación matemática y buenas prácticas. Ed. Graó.
Alsina, À i Xarxa d'Escoles Bressol Municipals de Girona. (2015). La descoberta del pensament matemàtic a l'escola bressol. Barcelona (ESP): Asociació de Mestres Rosa Sensat.

Alsina, C. (2000). Estimar les matemàtiques. Barcelona: Columna.
Alsina, C i d'altres (1995). Ensenyar matemàtiques. Barcelona: Graó.
Arce, M., Conejo, L. i Muñoz, J.M. (2019). Aprendizaje y enseñanza de las matemáticas. Editorial Síntesis.

Arteaga, B. i 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. i 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. i 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.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

