Universitat de Lleida

# DEGREE CURRICULUM

# NUMBERING, CALCULATION AND MEASUREMENT

Coordination: ZANUY RUFAS, RAQUEL

Academic year 2023-24

## Subject's general information

| Subject name | NUMBERING, CALCULATION AND MEASUREMENT |
|---|---|
| Code | 100877 |
| Semester | 1st Q(SEMESTER) CONTINUED EVALUATION |

| Typology | Degree | Course | Character | Modality |
|---|---|---|---|---|
| | Bachelor's Degree in Primary Training | 1 | COMPULSORY | Attendance-based |
| | Double bachelor's degree: Degree in Pre-school Education and Degree in Primary Training | 1 | COMPULSORY | Attendance-based |
| | Double bachelor's degree: Degree in Primary Training and Degree in Physical Activity and Sports Sciences | 2 | 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 | 6 | 5 |

| Coordination | ZANUY RUFAS, RAQUEL |
|---|---|
| Department | MATHEMATICS |
| Teaching load distribution between lectures and independent student work | Each enrolled credit requires a dedication of 25 hours on the part of the student. Of these 25 hours, 10 are given in the classroom and the remaining 15 must be dedicated by the student to independent work outside of class.<br><br>The autonomous work teachers dedicated to the study of the contents worked on in class; to doing the proposed activities, problems and assignments and to reading recommended documents. |
| Important information on data processing | Consult this link for more information. |
| Language | Catalan |

| Teaching staff | E-mail addresses | Credits taught by teacher | Office and hour of attention |
|---|---|---|---|
| EZQUERRA GARCIA, CARLES ALBERT | carles.ezquerra@udl.cat | 1,8 | |
| SALAT TORRES, JULIA | julia.salat@udl.cat | 1,8 | Office 3.19 upon previous agreement |
| SALAT TORRES, JULIA | julia.salat@udl.cat | 16,2 | Office 3.19 upon previous agreement |
| ZANUY RUFAS, RAQUEL | raquel.zanuy@udl.cat | 12 | Office 3.19 upon previous agreement |

## Learning objectives

- To know the school mathematics curriculum.
- To know and use mathematical and didactic aspects of numbering and calculation.
- To know and use mathematical and didactic aspects of estimation and measurement.
- To analyze, reason and communicate mathematical proposals of numbering, calculation and measurement.
- To pose and solve problems of calculation and measurement related to everyday life.
- To acquire and appreciate the didactic knowledge related to mathematics in the scientific and social world.
- To effectively adress the reading and critical commentary of texts related to numeration, calculation and measurement teaching and learning.
- To cooperatively solve content study and school learning tasks

## Competences

**Basic**

CB1. Students possess and understand knowledge in an area of study - Education - which starts from the basis of general secondary education, and is usually at a level which, while relying on advanced textbooks, also includes some aspects involving knowledge from the cutting edge of their field of study.

CB3. Students collect and interpret relevant data (normally within their study field) in order to formulate critical assessments based on reflecting about important topics for society, science or ethics.

**General**

CG1. Students promote democratic values, with a special impact on those of tolerance, solidarity, justice and no violence and they know and value human rights.

CG2. Students know the intercultural reality and develop attitudes of respect, tolerance and solidarity towards different social and cultural groups.

**Specific**

CE1. Students know the curricular areas of Primary Education, the interdisciplinary relationship between them, the assessment criteria and the body of didactic knowledge about the respective teaching and learning procedures.

CE2. Students design, plan and evaluate teaching and learning processes, both individually and in collaboration with other teachers and professionals at the center.

## Subject contents

Block 1. Mathematics learning

Block 2. Natural numbers

Block 3. Numbering systems

Block 4. Addition and subtraction

Block 5. Multiplication and division

Block 6. Divisibility

Block 7. Fractions, proportions and decimal numbers.

Block 8. Magnitudes and measurement

Block 9. Problem solving

## Methodology

**Face-to-face lessons**

- Problem solving, workshops related to theoretical contents and discussion with students.
- Problem solving and analysis of didactic proposals.
- Exposition the subject contents.
- Workshops with manipulative resources.

**Non-contact hours**

- Study of theoretical and practical contents
- Elaboration of a mathematics activity for primary school
- Reading of the recommended texts and elaboration of the related tasks
- Autonomous learning

## Development plan

**Schedule of contents**

| WEEK | CONTENT |
|---|---|
| 1 | Subject presentation |
| 1 and 2 | Mathematics learning |
| 3 | Natural numbers and their didactics |
| 4 | Numeracy sistems and their didactics |

| 5 and 6 | Addition and subtraction and their didactics |
|---------|----------------------------------------------|
| 7 and 8 | Multiplication and division and their didactics |
| 9 | Divisibility and their didactics |
| 10 and 11 | Fractional numbers and their didactics |
| 12 and 13 | Measure and its didactics |
| 14 | Problem solving |

**Practical seminars**

| Seminar | Week | Place |
|---------|------|-------|
| Manipulative materials for numeracy systems | 4 | Regular classroom |
| Manipulative materials for basic operations learning | 8 | Regular classroom |
| Manipulative materials for fractional numbers and mesasure learning | 12 | Regular classroom |

**Schedule of the evaluation activities**

| Activity | Calendar | Place |
|----------|----------|-------|
| Partial exams | Weeks 8 and 13 | Regular classroom |
| Final exam | According to the official exams calendar | According to the official exams calendar |
| Group assignment | See the calendar of assessment activities specific to each modality. | Regular classroom |

## Evaluation

| Evaluation bloc | % | Minimum qualification | Modality | Recovery |
|-----------------|---|-----------------------|----------|----------|
| Final exam | 50% | 4,5 | Individual | Yes |
| Assignment | 30% | 4,5 | In groups | Yes |
| Midterm exams (2 during the semester) | 20% | - | Individual | No |

In order to recover the final exam and/or the assignment you must receive a minimum of 5 in the corresponding recovery.

The qualification of the activities that have been recovered, which is usded to calculate the final qualification of the subject, is always 5.

For those people who have been granted the <u>alternative evaluation</u>, the evaluation process is as follows:

| Evaluation activity | % | Minimum qualification | Modality | Recovery |
|---|---|---|---|---|
| Final exam | 50% | 4,5 | Individual | Yes |
| Assignment | 30% | 4,5 | In groups (with the option of doing it individually) | Yes |
| Midterm exams (1 the same day of the final exam) | 20% | - | Individual | No |

The evaluation measures indicated by UdLxTothom will be applied.

## Bibliography

CALLEJO, M. L. Un club matemático para la diversidad. Madrid: Narcea, 1990.

CENTENO, J. Números decimales. Madrid: Síntesis, 1988.

CASTRO, E. (editor) Didáctica de la matemática en la Educación Primaria. Madrid: Síntesis, 2001.

CHAMORRO, C.; BELMONTE, J. El problema de la medida. Madrid: Síntesis, 1988.

CHAMORRO, M. C. (coord.) Didáctica de las matemáticas para Primaria, Madrid: Pearson Educación, 2003.

CODINA, R. i altres. Fer matemàtiques. Vic: Eumo, 1992.

CORBALÁN, F. La matemática en la vida cotidiana. Madrid: Addison–Wesley / Universidad Autónoma de Madrid, 1999.

FISHER, R.; VINCE, A. Investigando las matemáticas. Madrid: Akal, 1990.

GIMÉNEZ, J.; GIRONDO, L. Càlcul a l'escola. Barcelona: Graó, 1990.

IFRAH, G. Historia de una gran invención. Madrid: Alianza, 1987.

LLINARES, S; SÁNCHEZ, M. V. Fracciones. Madrid: Síntesis, 1988.

MASON, J. i altres. Pensar matemáticamente. Barcelona: Labor/MEC, 1989.

POLYA, G. Cómo plantear y resolver problemas, México: Trillas, 1976.

SKEMP, R. Psicología del aprendizaje de las matemáticas. Madrid: Morata, 1980.

TORRA, M.; BATLLE, I.; SERRA, T. Matemáticas. Educación Primaria. Libros Primer Ciclo, Segundo Ciclo, y Tercer Ciclo. Madrid: MEC / Mare Nostrum, 1994.

UDINA, F. Aritmética y calculadoras. Madrid: Síntesis, 1989.