UAB
Universitat Autònoma de Barcelona

Mathematical Practice in the Early Childhood Education Classrooms

Code: 101987
ECTS Credits: 4

2024/2025

Degree	Type	Year
2500797 Early Childhood Education	OB	4

Contact

Name: Maria Merce Edo Baste

Email: meque.edo@uab.cat

Teachers

Maria Merce Edo Baste

(External) Judith Fabrega

Teaching groups languages

You can view this information at the end of this document.

Prerequisites

It is recommended that the student has studied the subject:
- Mathematics at the childhood education curriculum.

Objectives and Contextualisation

"Mathematical practice in the childhood classroom" is the natural continuation of the subject "Mathematics at the childhood education curriculum" done the previous year. The new course develops practical knowledge and the application of childhood mathematical curriculum. It focuses on knowledge, analysis and design of educational situations for teaching and learning mathematics in early childhood education, with special emphasis on kindergarten and recovering what had been learned from the stage 0-3.

That is why from the subject: *Mathematical practice in the childhood classroom*, it is very important to stress in the ability to link and integrate the knowledge the students are acquiring in different subjects to obtain a global and interdisciplinary vision of teaching in the early ages.

Educational objectives:.

1. Knowing the curricular mathematical content from 0 to 6 years: geometry, measurement and data analysis.
2. Know and be able to analyze interdisciplinary teaching situations, identifying the mathematical content and the content of other areas that work.

3. Design didactic teaching situations and mathematical learning for children 3 to 8 years.

Competences

- Consider classroom practical work to innovate and improve teaching.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Promote and facilitate early infant learning, from a global and integrative perspective of different cognitive, emotional, psychomotor and developmental dimensions.
- Understand mathematics as sociocultural knowledge.
- Understand teaching strategies to develop numerical representations and spatial geometric and logical development notions,.
- Understand the scientific, mathematical and technological bases of the curriculum at this stage as well as theories on the acquisition and development of the corresponding learning.
- Work in teams and with teams (in the same field or interdisciplinary).

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Be able to analyse a learning situation, assess its relevance and make innovative alternative proposals.
3. Be able to design personal teaching situations based on the curriculum and theoretical guidelines and examples shown in the subject for the teaching and learning of mathematics in infant education.
4. Be able to draw on best mathematical practices to create new and personal ones.
5. Be able to identify mathematical aspects in everyday life and be able to potentiate them and share them with children to facilitate their learning.
6. Be able to organize both personal and group work to design and implement a joint project.
7. Know about didactic situations and experiences that are created with a global and inclusive perspective of different cognitive, emotional, psychomotor and volitional dimensions.
8. Propose new methods or well-founded alternative solutions.
9. Understand learning and teaching theory as governed by the mathematics curriculum.
10. Understand the diversity of educational situations designed around the mathematics curriculum.
11. Understand the diversity of interdisciplinary teaching situations for teaching and learning of mathematics in kindergarten.

Content

This course consists of five teaching units.
1. Educational and professional analysis of cases and classroom situations.
   1.1 General Aspects: Psychological Theoretical Framework. Mathematics in interdisciplinary and globalizing situations
2. Geometry.
2.1 Forms 3D and 2D.
2.2. Location and orientation in space. Location and relative positions.
3. Measure.
3.1. Magnitudes and measurement. Compare and sort items. Identify magnitudes. Measurement units. Length, volume and mass. Measuring instruments.
3.2. The measurement of time. Temporal sequences. Using the calendar.
4. Data Analysis,
4.1. Statistical study. Data Collect. Representation of information and simple graphics.
4.2. Analysis and interpretation of data.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Presencial seminars	20	0.8	
Type: Supervised			
Supervised	30	1.2	
Type: Autonomous			
Autonomous student work	50	2	

Considering that the protagonist in the process of teaching and learning is the student. The methodology of the course has been planned as shown in the table below:

Activitat	Hores	Metodologia
seminars autonomus	15	Workspaces in small groups, guided by the teacher.
Seminars	20	Workspaces in small groups (group 1/2), supervised by the teacher. The purpose is by analyzing documents, case solving or various activities get deep into the contents and thematic worked in the large group.
Supervised and assessment	15	Spaces reserved for presenting the results of team work. The presentations of the results will be done in front of the other students. There will be a co-assessment among students, in addition to teacher evaluation.
Autonomous student work	50	Preparing of the recommended readings, that complement the work that has to be done. Writing up the texts that will be discuss and consensus on the seminars. Preparing presentations, and examination.

Our teaching approach and assessment procedures may be altered if public Health authorities impose new restrictions on public gatherings for COVED-19

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Examination	50%	0	0	1, 2, 5, 7, 8, 9, 10, 11
Team work	30%	0	0	1, 3, 4, 6, 7, 8, 9, 10
Tests & participation	20%	0	0	1, 2, 3, 5, 7, 10, 11

CONTINUOUS evaluation will be carried out throughout the course using the activities shown below. Attendance to face-to-face classes is mandatory.

CONTINUOUS Evaluation Activities

1. Individual questionnaire (geometry content). The questionnaire will be completed at the end of Theme 2; halfway through the subject. (20% of the final grade)
2. Final submission and oral presentation of interdisciplinary group work. To be submitted the next to last week of the course. . (30% of inal grade)
3. Individual written exam. (Contents will include: Teaching Units 1 to 4. Readings. Seminars. Quizzes. Work). The exam will take place the last week of the course. (50% of the final grade)

It is necessary to score at least 5 out of 10 in each of the three evaluation activities in order to pass the subject.

CONTINUOUS evaluation is carried out through GROUP and INDIVIDUAL activities

- Group evaluation of interdisciplinary work.

The following instruments are available for this evaluation:

1. The written assignment is the result of theoretical and practical group work. The final written work will be submitted in the next to last week of the course .
2. The oral defenses will be held during the next to last week of the subject.
3. The digital support they use to during their presentations (video) will be also submitted the next to last week of the subject.

The grade obtained in this group evaluation represents 30% of the final grade of the subject, but a minimum score of 5 is necessary to pass the subject. This interdisciplinary work will not have reevaluation.

The date of presentation of the interdisciplinary work will be: 10/12/2024 (G61); 18/12/2024 (G62).

Individual evaluation.

In this part, the scientific and technical knowledge of the subject acquired by the students is evaluated individually.

1. The first part of the individual evaluation consists of questionnaire (possibly online) on the content of geometry. The questionnaire will be completed at the end of Unit 2 (geometry).
2. The other part of the individual evaluation will be carried out through a individual written test. It will take place the last week of the subject.

The content of the individual evaluation includes everything done during the subject: teaching units, group work, seminars, questionnaires, and readings.

The qualification obtained in the individual evaluation will represent 70% of the final grade of the subject (20% of the questionnaire and 50% of the final test).

It is necessary to obtain a minimum qualification of 5 out of 10 in the exam and in the individual questionnaire to pass the subject. The date of the final exam will be: 17/12/2024 (G61); 11/12/2024 (G62)

In case of failing the individual evaluation (questionnaire and/or final test) a second attempt exam is planned on the following dates: 28/01/2025 (G61); 29/01/2025 (G62).

UNIQUE EVALUATION. Evaluation activities

1. Individual questionnaire. The questionnaire will be completed during the single evaluation day. 17/12/2024 (G61); 11/12/2024 (G62) (20% final mark).
2. Written work submission and oral presentation of individual interdisciplinary work. This will take place onduringthe single evaluation day. 17/12/2024(G61); 11/12/2024 (G62), (30% final mark).
3. Individualwritten exam. (Contents of: the Teaching Units from 1 to 4. Readings. Seminars. Quizzes. Work). This will take place during the single evaluation day. 17/12/2024 (G61); 11/12/2024 (G62). (50% of the final mark).

The following instruments will be used for the evaluation of the interdisciplinary work:

1. The written memory is the result of theoretical and practical work. The final report will be submitted on the day of the single evaluation: 17/12/2024 (G61); 11/12/2024 (G62).
2. The oral defense of work. The defense will be held on the day of the single evaluation: 17/12/2024 (G61); 11/12/2024 (G62).
3. The digital support that will be used during the presentation (video) will be also delivered on the day of the single evaluation: 17/12/2024 (G61); 11/12/2024 (G62).

The grade obtained for this work represents 30% of the final grade of the subject, but it is necessary to obtain a minimum grade of 5 to pass the subject. This interdisciplinary work will not have reevaluation

It is necessary to obtain a minimumrating of 5 out of 10 in each of the three evaluation activities in order to pass the subject.

In the event of failing the questionnaire and/or final exam, the same reevaluation system will be applied as for continuous evaluation students. The reevaluation dates will be: 28/01/2025 (G61); 29/01/2025 (G62)

In the single assessment, 100% of the final mark corresponds to individual assessment: (20% of the questionnaire, 30% interdisciplinary work and 50% final test).

For the unique and continuous assessment:

To passthissubject, it is necessary for the student to show goodgeneral communication skills, oral and written, and a good command of thevehicular language contained in the teaching guide. In all activities (individual and in groups), the language correction, the writing and the formal aspects of presentation will be taken into account. Students must be able to express themselves fluently and correctly, and show a high degree of understanding of academic texts. The student must show a competence equivalent to level 2 (equivalent to C2). Before handing in evidence of learning, it is necessary to check that the sources, notes, textual citations and bibliographic references have been written correctly following the APA regulations.

Total or partial plagiarism of one of the evaluation activities and/or copying in an evaluation test is a direct reason to fail the subject. The copying or plagiarism of any type of evaluation activity constitutes a crime, and it will be penalized with a 0 as a grade for the subject losing the possibility of reevaluation, ¡ whether it is an individual or group work (in this case, all members of the group they will score 0).

Class attendance is mandatory: thestudent must attend all classes to be evaluated (a maximum of 20% attendance in classes is contemplated, both in large group classes and in seminars).

The return and qualification of the evaluation activities will be carried out a maximum of 20 working days after delivery.

It will not be assessed if the documents have not been submitted within the agreed deadlines

There are no attitudinal aspects that affect the grade.

Bibliography

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There will be specific literature for each topic on the virtual campus.

Software

No specific software beyond is required. Students will use the usual ones (text editor, excel or similar, video editor,...).

Language list

Name	Group	Language	Semester	Turn
(SEM) Seminars	611	Catalan	first semester	morning-mixed
(SEM) Seminars	612	Catalan	first semester	morning-mixed
(SEM) Seminars	621	Catalan	first semester	afternoon
(SEM) Seminars	622	Catalan	first semester	afternoon
(TE) Theory	61	Catalan	first semester	morning-mixed
(TE) Theory	62	Catalan	first semester	afternoon