

26520 - Didactics: Mathematics

Syllabus Information

Academic year: 2023/24

Subject: 26520 - Didactics: Mathematics

Faculty / School: 107 - Facultad de Educación

202 - Facultad de Ciencias Humanas y de la Educación

301 - Facultad de Ciencias Sociales y Humanas

Degree: 301 - Degree in Nursery School Education

302 - Degree in Nursery School Education

303 - Degree in Nursery School Education

ECTS: 6.0

Year: 2

Semester: 302 - Second semester

303 - First semester

301 - First semester

Subject type: Compulsory

Module:

1. General information

Didactics of mathematics is responsible for the didactic-mathematical training of future teachers, both in its aspect of mathematical knowledge and didactic knowledge. Therefore, its contents and the professional competencies that they promote are strongly determined by the curricular orientations of the Infant stage and the methodological considerations in this regard. In the entire curriculum of this Degree, it is the only subject that develops specifically the learning and teaching of mathematics with children from 0 to 6 years old. This training will be essential for teachers of Ed. Infantil later on in Prácticas Escolares II and for his entire later professional trajectory.

It develops the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement: 4, 5 y 10.

It is not necessary to have mathematical knowledge beyond that acquired in compulsory secondary education in order to successfully complete this subject at . However, it is essential to carry out continuous work, as well as to have a good disposition to rework mathematical concepts and reflect on them from a teaching perspective.

2. Learning results

1. Reconstructs the mathematical contents of Early Childhood Education from the position of a teacher.
2. Uses mathematical language accurately.
3. Critically analyzes situations and didactic resources for the teaching and learning of mathematics in Early Childhood Education.
4. Design didactic situations for the learning of mathematics in Early Childhood Education, taking into account the Curricular guidelines.
5. Evaluates the learning of mathematical contents of the students and detects the difficulties in the learning of these contents.

3. Syllabus

- Unit 1.- MATHEMATICS IN KINDERGARTEN EDUCATION
- Unit 2.- Logical-mathematical skills in kindergarten education
- Unit 3.- NUMBER IN KINDERGARTEN EDUCATION
- Unit 4.- MAGNITUDES AND THEIR MEASUREMENT IN KINDERGARTEN EDUCATION
- Unit 5.- GEOMETRY AND ORGANIZATION OF SPACE IN KINDERGARTEN EDUCATION
- Unit 6.- STATISTICS AND PROBABILITY IN KINDERGARTEN EDUCATION

4. Academic activities

The future teaching professional must develop a didactic action focused on problem solving and on the interaction of the child with his material and social environment. Therefore, the teaching offered in this subject is based on the same principles. In general, the master class will not have the traditional function of sequential presentation of contents, but will serve to anchor the contents, both mathematical and didactic, that have previously appeared in the practical classes around problem solving and case study tasks.

Practical classes (divided group). The goal will be the resolution of problematic situations, questions, cases...

manipulating different didactic materials, in order to answer the questions posed in the practice script.

These experiences will be of a mathematical and didactic nature. To adequately answer the questions, they will need to build new concepts, and review and deepen the ones you already know..

Theoretical classes. The importance of the mathematical and didactic contents addressed will be reflected upon for the teaching work of the teacher and the student, the concepts that have appeared in the practical classes will be presented and the main questions that appeared during the class will be discussed and corrected in the light of the solutions provided by the students in the practical classes. In some sessions, students will be asked to solve homework problems with mathematical and/or didactic content, or other tasks such as the analysis of teaching proposals or case studies, etc.

Individual work. Throughout each topic there will be articles on the subject to be covered and different problem sheets and case studies to be solved in class sessions or outside class hours.

Special team practice. Part of the evaluation of the course will consist in the realization of a directed work in teams of 5 students, approximately. Tutorials will be held with each team, on the dates indicated by part of the professors, to detail the work, supervise its progress and evaluate the participation of all the components of the team in the completion of the work. In the Faculty of Education, the schedule and calendar of the control sessions and evaluation of the special practice will be conveniently announced, being in one of the central weeks and in one of the final , respectively. In the Faculty of Human Sciences and Education, the monitoring of the special practice will be carried out in the weekly session assigned for this purpose. At the Faculty of Social and Human Sciences, the special internship will be developed in the timetable of the subject dedicated to practical classes and will be distributed in 2 sessions that will take place during one of the intermediate weeks and one of the final weeks of the term, respectively.

5. Assessment system

A. Successful participation in practical team sessions (2 points). Through the delivery of team scripts in each practical session, direct observation and completion of a questionnaire and/or an individual script. Criteria:

1. Correct resolution and argumentation to the tasks of the practice scripts.
2. Active participation and positive and respectful attitude towards teachers and other classmates.
3. Proper functioning of each team member.

B. Individual work (1 point). Through the delivery of homework solutions in Moodle: problem solving, analysis of educational materials, case studies, etc. Criteria:

1. Correct resolution and argumentation of the activities (individual).
2. Active participation and positive and respectful attitude towards the teacher and the rest of their classmates during the discussion sessions and correction of the activities.

C. Special team practice (1 point). Through the delivery of a dossier and the presence of the student to the sessions face-to-face, tutoring and final defense, dedicated to this activity. Assessment criteria:

1. Correctness, adequacy, depth, reflection and complete realization of the answers to the activities proposed in the script of the special practice with respect to the contents addressed in the subject syllabus.
2. Adequate final presentation of the special practice: clarity of the expository discourse, correct use of the language in which the subject is taught and correct use of quotations, references and sources consulted for the work.
3. Proper functioning of each team member in monitoring and advocacy sessions.

D. Final individual examination (GradeD1: 10 points. NoteD2: 6 points). Criteria:

1. Clarity, correctness and adequate reasoning in the resolution of the questions. The evaluation of each question will also take into account the validity of the procedure and the argumentation made.
2. Use of the contents worked (concepts, procedures, techniques...) during the course.
3. Use of appropriate technical vocabulary and the correct use of the language in which the subject is taught.

Qualification criteria and passing requirements:

- IfD1 is greater than or equal to 4, Continuous rating = A + B + C +D2 andFinal rating = maximum(D1, Continuousrating).
- IfD1 is less than 4, thenFinal Rating =D1.

In order to pass, a final grade of 5.0 or higher is required.

Global test. Students who have not completed or passed activities A, B or/and C may take a global test that coincides in content, time and space with activity D. Their final grade will be in the range 0 to 10 points and the students will pass the course

when they obtain a score greater than or equal to 5.0.

Second call for applications. Students who have not passed the course in the first exam may sit for the global test on the dates set by the Centers for the second call of the term, subject to the same D criteria.

The grades obtained from A, B and C, if any, will be kept for the second round.

Fifth and sixth call. The fifth and sixth convocation will be evaluated with the same activities, criteria and requirements as the first and second convocation **of the current academic year, respectively.**

Finally, it must be taken into account that the Rules of Coexistence of the school will be applicable University of Zaragoza to the irregularities committed in the evaluation tests by means of academic fraud, as well as the application of Article 30 of the Regulations of the Standards for the Evaluation of Learning in relation to irregular practices other than academic fraud.