

26520 - Didactics: Mathematics

Syllabus Information

Academic Year: 2019/20

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: 302 - Degree in Nursery School Education

301 - Degree in Nursery School Education

303 - Degree in Nursery School Education

ECTS: 6.0

Year: 2

Semester: 301 - First semester

302 - Second semester

302 - Second semester

302 - Second semester

303 - Second semester

303 - Second semester

Subject Type: Compulsory

Module: ---

1. General information

1.1. Aims of the course

1.2. Context and importance of this course in the degree

1.3. Recommendations to take this course

2. Learning goals

2.1. Competences

2.2. Learning goals

1. The student rebuilds his/her knowledge about Preschool Mathematics contents by adapting them to the professional needs of teachers.
2. The student accurately uses mathematical language.
3. The student analyses critically didactical situations and resources for the teaching and learning of mathematics in Preschool.
4. The student designs didactical situations for the learning of mathematics in Preschool according to Spanish syllabus.
5. The student assesses the mathematical knowledge of their pupils and notices their learning misunderstandings and errors.

2.3. Importance of learning goals

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of

teaching and learning tasks are implemented.

The prospective teachers must develop a didactical action focused on problem solving, and the children interaction with its environment (both physical and social). Hence, the teaching practice in this course offers is based on the same principles. The master classes will not have, in general, the traditional role of presenting the contents in a sequential manner. On the contrary, it will serve as a mean to settle the mathematical and didactical concepts that previously appeared in the practical lessons, around tasks such as case studies, problem solving, analysis of manipulatives and resources, etc.

4.2.Learning tasks

This is a 6 ECTS course organized as follows:

- ? Theory session (24 hours). The different concepts in the syllabus are studied.
- ? Practical lessons (22 hours). The students work in small groups (groups of 4-5 students). The main goal of these sessions is to examine study cases, analyze tasks and resources, solve problems, ... by manipulating different didactic materials, to answer the questions asked in a given script. These situations will be both of mathematical and didactical nature. In order to answer the questions, students will need to build new concepts, and revise and get a deeper understanding of those that are already known.
- ? Problem solving and case study sessions (14 hours). Along each chapter of the course, the students will be given some papers about the covered subject, as well as problem sheets and case studies. Some of them will be answered in the classroom, and others will be given as homework. This homework tasks will have some impact in the final grade.
- ? Group project (2 hours). One part of the evaluation will consists in the realization of a group project (groups of 4-5 students). This project will consists in the analysis and evaluation of a teaching proposal. Mandatory sessions will be arranged with the teacher to explain the contents of the project, follow up its development, and evaluate the participation of all members of each group.
- ? Examination (3 hours).
- ? Autonomous work and study (89 hours).

4.3.Syllabus

The course will address the following topics:

- Early Childhood Mathematics Education
- Mathematical logic operations in Nursery School
- Number in Nursery School
- Magnitudes and measurement in Nursery School
- Geometry and spatial reasoning in in Nursery School

These contents are articulated in thematic units. In each one of them, the mathematical and didactical aspects are treated together.

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the "<https://moodle2.unizar.es/add/>"

4.5.Bibliography and recommended resources