

Academic Year/course: 2021/22

26629 - Didactics: Geometry

Syllabus Information

Academic Year: 2021/22

Subject: 26629 - Didactics: Geometry

Faculty / School: 107 - Facultad de Educación

202 - Facultad de Ciencias Humanas y de la Educación

301 - Facultad de Ciencias Sociales y Humanas

Degree: 298 - Degree in Primary School Education

299 - Degree in Primary School Education

300 - Degree in Primary School Education

ECTS: 6.0

Year: 3

Semester: Second semester

Subject Type: Compulsory

Module:

1. General information

1.3. Recommendations to take this course

Group 1 in the Faculty of Education will be taught in English. In order to take this course in English it is advisable to have at least a B1 level in that language.

2. Learning goals

2.2. Learning goals

In order to pass this subject, students must demonstrate the following outcomes?

1. You should be able to rethink what you have learned about Geometry until now and adapt it to your professional development.
2. You should be able to use the mathematical language in an accurate way.
3. You should be able to use geometry to solve problems in the real world.
4. You should be able to describe and assess the knowledge process and the learning difficulties related to geometry in Primary Education.
5. You should be able to study and design didactical resources and activities for the teaching and learning of geometry in Primary Education.

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The learning process designed for this subject is based in the following facts: the professional future of teaching must develop a didactical action focused in problem solving and children interactions with his or her material and social environments. Hence, the teaching offered in this subject in the same

principles. Lectures will not have, in general terms, the traditional function of sequenced presentation of contents but will serve to lodge the contents, both mathematical and didactic, that have previously appeared in the practical sessions, around the tasks of solving problems, case studies, etc.

In the group 1 from the Education Faculty of Zaragoza the subject will be given in english. All the learning and evaluation activities (except tutoring sessions) will take place in this language.

4.2. Learning tasks

The program offered to the student to help him achieve the expected results includes the following activities:

Practical sessions (divided group). The fundamental objective will be the resolution of problematic situations, questions, actual cases... manipulating different didactic materials, in order to answer the questions that arise during the practical sessions. The nature of these experiences will be both mathematical and didactic. To adequately answer the questions, it will be necessary to build new concepts, as well as to review and to elaborate on those that are already known.

Theory sessions. It will reflect upon the importance of the mathematical and didactic contents addressed for the teaching work of the teacher and the learning work of the student. The concepts that have appeared in the practical sessions and the main issues that appeared during the course will be shown, discussed and corrected in light of the solutions provided by the students in the practical classes.

Practical sessions (large group). Throughout each topic, articles, problem sheets and case studies will be delivered on the subject to be dealt with. Some of them will be solved in class, while others will be left as homework to the students and will therefore have their weight in the final grade.

Small group assignment. The students will develop a work in groups of 3-4 students. In this work an educational proposal will be analyzed and evaluated. Some tutorials will be arranged with each group to detail the work that must be done in a compulsory manner, monitor their progress and evaluate the participation of each member of the group in the realization of the work.

Activities	Session hours	Autonomous work	Total
Practical sessions (divided groups)	20	10	30
Theory sessions	22	30	52
Practical sessions (large group).	14	25	39
Small group assignment	2	18	20
Exam	3	6	9
Total	61	89	150

4.3. Syllabus

The course will address the following topics:

- Recognition of geometric shapes (figures in the plane and solids in space).
- Movements in the plane and in space. Equality and symmetry.
- Design and construction of geometric shapes.
- Analysis of the relationships between the geometrical forms and their elements.
- Measurement of geometric magnitudes. Similarity.
- Location in the plane and in space.
- Geometrical reasoning: to define, to classify, to conjecture, to prove.
- The modeling of the sensible world through geometry.
- Situations and didactic resources in the teaching of elementary geometry in Primary Education.

4.4. Course planning and calendar

The calendar of presence-based sessions, presentation of assignments and key dates is communicated through the Moodle platform (ADD) at the beginning of the semester.

Control and assessment sessions of the group assignment may be scheduled outside the class timetable or shift depending on the teacher's availability. The specific schedules will be fixed in the first weeks of the course.

The dates of the final exams can be checked on the web page of the corresponding Faculty.

4.5. Bibliography and recommended resources

It can be found on the library's web page.

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=26629>