Universidad Zaragoza

Academic Year/course: 2024/25

26629 - Didactics: Geometry

Syllabus Information

Academic year: 2024/25
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

The main goal of the subject is the mathematical and didactic training of future teachers of Primary Education with regard to school geometry.

This subject is part of the Teaching and Learning of Mathematics, together with the subjects Didactics of Arithmetic I and II. These subjects are responsible for the didactic-mathematical training of future teachers of Primary Education, together with their relationship with school practices.

It is not necessary to have mathematical knowledge different from that acquired in compulsory secondary education to successfully complete the subject . However, it is essential to have a willingness to rework and reflect on such concepts from a teaching perspective as well as continued work on the subject.

2. Learning results

1. It reconstructs the geometric contents of Primary Education, adapting them to the professional needs of the teacher of this educational stage.

2. Uses mathematical language accurately.

3. It poses and solves problematic situations in which geometric objects are used to model the sensible world.

4. Describes and evaluates the successive states of knowledge and learning difficulties of primary school students during the process of acquisition of geometric content.

5. Analyzes and designs situations/resources for the teaching and learning of geometry in Primary Education.

3. Syllabus

Recognition of geometric shapes. Movements in the plane and in space. Equality and symmetry. Design and construction of geometric shapes. Analysis of the relationships between geometric shapes and between their elements. Measurement of geometric magnitudes . Similarity. Location in the plane and in space. Geometric reasoning: define, classify, conjecture, prove. The modeling of the sensible world through geometry. Situations and didactic resources in the teaching of elementary geometry in elementary education.

4. Academic activities

Theoretical classes, explaining theoretical contents, which are more interactive and participative than the master classes . In some sessions, students will be asked to solve problems of mathematical content and/or didacticcontent , or other tasks such as the analysis of teaching proposals or case studies, etc.

Practical classes (divided group). The main 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 both mathematical and didactic in nature. To adequately answer the questions, you will need to build new concepts, and review and deepen the ones you already know..

Special practice. Carrying out a team work (approximately 5 members). Tutorials will be held with each team on the dates indicated by the faculty, to detail the tasks to be performed, monitor their progress and evaluate the participation of each team member in the work.

In the Faculty of Education of Zaragoza the schedule and calendar of the control and evaluation sessions of the special practice will be conveniently announced, being in one of the central weeks and in one of the final weeks, respectively. In the Faculty of Human Sciences and Education of Huesca, the monitoring of the special practice will be carried out in the weekly session assigned for this purpose. In the Faculty of Social and Human Sciences of Teruel, 3 sessions of the internship schedulewill be

dedicated to the monitoring and evaluation of the special internship, in the fifth, ninth and twelfth weeks

Individual work. Throughout each topic there will be articles on the subject to be commented, sheets of problems or case studies to be solved in class sessions or outside class hours.

5. Assessment system

A. Participation in **practical classes** (2 points). Through the delivery of team scripts, direct observation. At the discretion of the faculty of each Center, completion of an individual questionnaire that will account for up to 50% of the grade for the internship. Assessment criteria:

- Correct resolution and argumentation of the proposed tasks.

- Active participation and positive and respectful attitude towards teachers and other classmates.

- Proper functioning of each team member.

- If applicable, correct resolution of the individual questionnaire related to the work done in the session.

B. **Individual work** (1 point). Through the delivery of the solutions to the proposed works. Assessment criteria: - Correct resolution and argumentation of the activities (individual).

- Active participation and a positive and respectful attitude towards the teacher and the rest of the classmates during the sessions.

C. **Special** team **practice** (1 point). Through the delivery of a final team dossier and the presence of each member to the face-to-face tutoring sessions and the final defense session. Assessment criteria:

- Correctness, adequacy, depth, reflection and complete realization in the answers to the proposed activities with respect to the contents of the program of the subject.

- Final presentation: adequate presentation and structure, 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, with plagiarism being penalized.

- Proper functioning of each group member in the monitoring and defense sessions.

D. **Final individual examination** (Grade D1: 10 points. Note D2: 6 points). Assessment criteria:

- 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.

- Use of the contents worked on (concepts, procedures, techniques...) during the course.

- Use of adequate technical vocabulary and correct use of the language in which the subject is taught.

Grading criteria and requirements for passing the subject:

- If D1 is greater than or equal to 4, Rating2 = A + B + C + D2 and Final rating = maximum (D1, Rating2) - If D1 is less than 4, Final Rating=D1

In order to pass, the final grade must be equal to or higher than 5.

Global test and second summons: Students who have not completed or passed activities A, B or/and C may take the test referred to in activity D. Their final grade will be in the range of 0 to 10 points and they will pass the subject when they obtain a score greater than or equal to 5 in this activity. Students who have not passed the subject on the first call may sit for the global test on the dates set by the centers for the second call of the year, subject to the same criteria of D. The grades obtained from A, B and C, if any, will be maintained for thesecond call.

Test fifth and sixth summons: The fifth and sixth convocation will be evaluated by a tribunal with the same activities, criteria and requirements as the first and second call of the current academic year, respectively.

Total or partial fraud or plagiarism in any of the evaluation tests will result in failure of the subject with the minimum grade, in addition to the disciplinary sanctions that the guarantee commission adopts for these cases.

In relation to this last point, the Rules of Coexistence Regulations of the University of Zaragoza will be applicable to Zaragoza to

irregularities committed in the evaluation tests through academic fraud, as well as the application of article 30 of the of article 30 of the

Learning Assessment Standards Regulations regarding irregular practices other than academic fraud fraud.

6. Sustainable Development Goals

4 - Quality Education
5 - Gender Equality
10 - Reduction of Inequalities