COURSE DATA

DATA SUBJECT

Code: 33655
Name: Teaching geometry, measurement and probability and statistics
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1305 - Degree in Primary School Education	Facultat de Formació del Professorat	4	First quarter
1339 - Grado en Maestro/a Educación Primaria	Facultat de Formació del Professorat	4	

SUBJECT-MATTER

Degree	Subject-matter	Character
1305 - Degree in Primary School Education	Teaching maths in primary education	COMPULSORY
1339 - Grado en Maestro/a Educación Primaria	Teaching maths in primary education	COMPULSORY

COORDINATION

PLA CASTELLS MARTA

MELCHOR BORJA CARMEN

SUMMARY

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

1305 - Degree in Primary School Education

Analyse critically the most relevant issues in today's society that affect family and school education: social and educational impact of audiovisual languages and of screens; changes in gender and inter-gender relations; multicultural and intercultural issues; discrimination and social inclusion, and sustainable development; Also, carry out educational actions aimed at preparing active and democratic citizens, committed to equality, especially between men and women.

Analyse didactically the mathematics of the school curriculum.

Analyse ICT as a teaching resource for mathematics.

Assume that teaching must be perfected and adapted to scientific, pedagogical and social changes throughout life.

Design, plan and evaluate teaching and learning classroom activities in multicultural and co-educational contexts.

Design, plan and evaluate the teaching and learning of mathematics in the classroom.

Develop and evaluate mathematical contents in the curriculum through appropriate teaching resources.

Evaluate mathematical contents in the curriculum through appropriate teaching resources.

Express oneself orally and in writing correctly and appropriately in the official languages of the autonomous region.

Identify and plan the resolution of educational situations that affect students with different abilities and different learning rates, and acquire resources to favour their integration.

Know and apply basic educational research methodologies and techniques and be able to design innovation projects identifying evaluation indicators.

Know and apply basic methodologies and techniques of educational research to teaching mathematics and be able to design innovation projects identifying evaluation indicators.

Know and implement innovative experiences for teaching mathematics in primary education.

Know how to work as a team with other professionals within and outside the school to attend to each student, to plan the learning sequences and to organise work in the classroom and in the play space.

Know teaching interventions that take into account the difficulties and errors in learning mathematics in primary education.

Know the difficulties and errors in the process of teaching and learning mathematics in primary education and the cognitive processes.

Know the processes of interaction and communication in the classroom.

Know the school math curriculum.

Promote cooperative work and individual work and effort.

Promote the basic mathematical competences proposed in the curriculum among students.

Raise and solve mathematical problems.

Recognise the identity of each educational stage and their cognitive, psychomotor, communicative, social and affective characteristics.

Understand that systematic observation is a basic tool that can be used to reflect on practice and reality, and to contribute to innovation and improvement in education.

Use information and communication technologies effectively as usual working tools.

DESCRIPTION OF CONTENTS

1. Didactics of geometry and measurement.

1.1 About teaching and learning geometry. Theories of teaching and learning.

- Geometry in different contexts.
- Geometry in the curriculum and textbooks.
- Teaching and learning models. ICT as a teaching resource.
- Visualization and teaching-learning of geometry.

1.2 Didactic analysis of the teaching and learning processes of:

- Concepts, processes and relationships in geometry.
- Geometric movements and transformations.
- Representations of spatial objects.

1.3 Measurement of geometric magnitudes.

- Phenomenological exploration.
- Didactic analysis of measurement: The unit of measurement. Measurement of geometric objects.
- Relationships between geometric magnitudes.

1.4 The resolution of geometry and measurement problems.
1.5 Errors and difficulties in the learning of geometry and measurement.
1.6 Educational innovation projects in the teaching of geometry and measurement.

2. Didactics of probability and statistics.

2.1 On the teaching and learning of probability and statistics. Theories of teaching and learning.

- Probability and statistics in different contexts.
- Probability and statistics in the curriculum and textbooks.
- Teaching and learning models. ICT as a didactic resource.

2.2 Didactic analysis of the concepts of probability and statistics in primary education. Uses, meanings and representations.
2.3 Probability as a measure in situations of uncertainty.
2.4 The resolution of probability and statistics problems with didactic intention.
2.5 Difficulties and errors in the learning of probability and statistics.
2.6 Projects of educational innovation in the teaching of probability and statistics.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	60,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	0,00
Independent study and work	90,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

The development of the course will be based on a variety of teaching and learning methodologies, appropriate to the different types of activities to be carried out and the different work environments. These methodologies may include:

- Theoretical-practical face-to-face classes by the teaching staff.
- Group discussions between teachers and students or among students.

- Individual and group practical work.
- Individual and group tutorials.
- Computer work.

EVALUATION

The evaluation of the students will be carried out through continuous evaluation and the realization of a final exam.

In the continuous evaluation criteria, the following may be taken into account:

1. The participation of the students in the class sessions.
2. The resolution of all the tasks proposed throughout the course and their presentation within the deadlines to be determined.

The final grade of the course will be based on the following weighting:

- Continuous evaluation (paragraphs 1 and 2): between 20% and 50%.
- Final exam: Between 50% and 80%.

All the tasks proposed to be carried out by the students throughout the course are compulsory and evaluable. The weight of each one of them in the final grade will be proportional to its extension or complexity.

To pass the course, both in first and second call, it is necessary to pass the final exam (5 points out of 10).

To pass the course in the second call, it will be possible to recover both the continuous evaluation and the final exam.

In the tests, both in the first and second call, there may be excluding activities. It is
to say, if they are not passed, the rest of the test will be suspended.

Plagiarism or the improper use of artificial intelligence tools may be sanctioned according to article 15 of the evaluation and grading regulations of the Universitat de València.
In any case, the Regulation of Evaluation and Grading of the Universitat de València
(ACGUV 108/20917), approved in consell de govern of May 30, 2017, will be applied, especially in the articles 3, 5, 6, 7,12, 14, 15, 16 i 17. Link: https://ir.uv.es/ZoGjwU9 7,12, 14, 15, 16 i 17. Link: https://ir.uv.es/ZoGjwU9

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Jaime, A.; Gutiérrez, A. (1990): Una propuesta de fundamentación para la enseñanza de la geometría: El modelo de van Hiele, en S. Llinares y M.V. Sánchez (eds.), Teoría y práctica en educación matemática (Alfar: Sevilla), pp. 295-384.

Huerta, M. P. (2015). La resolución de problemas de probabilidad con intención didáctica en la formación de maestros y profesores de matemáticas. En C. Fernández, M. Molina y N. Planas (eds.), Investigación en Educación Matemática XIX (pp. 105-119). Alicante: SEIEM.

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Segovia, I. y Rico, L. (2011). Matemáticas para maestros de Educación Primaria. Madrid: Editorial Pirámide.

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