

**COURSE DATA****Data Subject**

Code	33627
Name	Teaching mathematics at nursery school
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1304 - Degree in Preschool Education	Faculty of Teacher Training	4	First term
1324 - Degree in Preschool Education (Ontinyent)	Faculty of Teacher Training	4	First term

Subject-matter

Degree	Subject-matter	Character
1304 - Degree in Preschool Education	22 - Teaching maths in preschool education	Obligatory
1324 - Degree in Preschool Education (Ontinyent)	22 - TEACHING MATHS IN PRESCHOOL EDUCATION	Obligatory

Coordination

Name	Department
DIAGO NEBOT, PASCUAL DAVID	85 - Mathematics Education

SUMMARY**English version is not available**

La asignatura de Didáctica de las matemáticas de educación infantil es una asignatura de carácter semestral, de 6 créditos que se imparte en el cuarto curso del Grado de Maestro/a de Educación Infantil.

La finalidad principal de la asignatura es promover la adquisición por los estudiantes de las competencias específicas señaladas en el Plan de Estudios de la materia, referidos a los contenidos propios de la didáctica de la matemática y así poder utilizarlo en las situaciones de enseñanza-aprendizaje de matemáticas en educación infantil. Así mismo, permitir ejercer la tarea del maestro de educación infantil en una sociedad que reclama una mejor formación en matemáticas de sus ciudadanos con un grado suficiente de alfabetización matemática que les confiera cultura, libertad y capacidad crítica.



La asignatura se organiza alrededor de los bloques que normalmente se encuentran en las disposiciones curriculares de matemáticas en educación Infantil: pensamiento lógico, números y aritmética, geometría, la medida y la resolución de problemas.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Para cursar adecuadamente la asignatura, es conveniente poseer los conocimientos de contenidos matemáticos correspondientes a la asignatura de Matemáticas para maestros.

OUTCOMES

1304 - Degree in Preschool Education

- Express oneself orally and in writing correctly and appropriately in the official languages of the autonomous region.
- Use information and communication technologies effectively as usual working tools.
- 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; multiculturalism and interculturalism; 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.
- Promote cooperative work and individual work and effort.
- Assume that teaching must be perfected and adapted to scientific, pedagogical and social changes throughout life.
- Know the processes of interaction and communication in the classroom.
- Recognise the identity of each educational stage and their cognitive, psychomotor, communicative, social and affective characteristics.
- Design, plan and evaluate teaching and learning classroom activities in multicultural and co-educational contexts.
- 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 and apply basic educational research methodologies and techniques and be able to design innovation projects identifying evaluation indicators.
- 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.
- 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 the mathematics curriculum in pre-primary education.
- Analyse mathematics didactically in the pre-primary mathematics curriculum.
- Be familiar with theories on the acquisition and development of mathematical learnings in pre-primary education.
- Know teaching strategies to develop competences in numerical representations and in spatial and geometric notions.
- Know teaching strategies to favour logical thinking in students in pre-primary education.
- Develop and evaluate mathematical contents in the pre-primary education curriculum by using appropriate teaching resources and promote the corresponding competences in students.
- Know and apply basic methodologies and techniques of educational research to teaching mathematics and be able to design innovation projects identifying evaluation indicators.
- Know the difficulties and errors in the process of teaching and learning mathematics in pre-primary education and the cognitive processes involved.
- Know teaching interventions that take into account the difficulties and errors in learning mathematics in pre-primary education.
- Analyse ICT as a teaching resource for mathematics in pre-primary education.
- Know and implement innovative experiences for teaching mathematics in pre-primary education.

1324 - Degree in Preschool Education (Ontinyent)

- Express oneself orally and in writing correctly and appropriately in the official languages of the autonomous region.
- Use information and communication technologies effectively as usual working tools.
- 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; multiculturalism and interculturalism; 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.
- Promote cooperative work and individual work and effort.
- Assume that teaching must be perfected and adapted to scientific, pedagogical and social changes throughout life.



- Know the processes of interaction and communication in the classroom.
- Recognise the identity of each educational stage and their cognitive, psychomotor, communicative, social and affective characteristics.
- Design, plan and evaluate teaching and learning classroom activities in multicultural and co-educational contexts.
- 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 and apply basic educational research methodologies and techniques and be able to design innovation projects identifying evaluation indicators.
- 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.
- 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 the mathematics curriculum in pre-primary education.
- Analyse mathematics didactically in the pre-primary mathematics curriculum.
- Be familiar with theories on the acquisition and development of mathematical learnings in pre-primary education.
- Know teaching strategies to develop competences in numerical representations and in spatial and geometric notions.
- Know teaching strategies to favour logical thinking in students in pre-primary education.
- Develop and evaluate mathematical contents in the pre-primary education curriculum by using appropriate teaching resources and promote the corresponding competences in students.
- Know and apply basic methodologies and techniques of educational research to teaching mathematics and be able to design innovation projects identifying evaluation indicators.
- Know the difficulties and errors in the process of teaching and learning mathematics in pre-primary education and the cognitive processes involved.
- Know teaching interventions that take into account the difficulties and errors in learning mathematics in pre-primary education.
- Analyse ICT as a teaching resource for mathematics in pre-primary education.
- Know and implement innovative experiences for teaching mathematics in pre-primary education.

LEARNING OUTCOMES

English version is not available

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theoretical and practical classes	60,00	100
Study and independent work	90,00	0
TOTAL	150,00	

TEACHING METHODOLOGY**English version is not available****EVALUATION****English version is not available****REFERENCES****Basic**

- Alsina, À. (2015). Matemáticas intuitivas e informales de 0 a 3 años. Elementos para empezar bien. Narcea.
- Baroody, A. J. (1988). El pensamiento matemático de los niños. Un marco evolutivo para maestros de preescolar, ciclo inicial y educación especial. Genís Sánchez Barberán (trad.) (3a ed.). Visor (Aprendizaje, 42).
- Canals, M. A. (1989). Per una didàctica de la matemàtica a l'escola. Eumo Editorial.
- Canals, M. A. (2009). Lògica a totes les edats. Associació de Mestres Rosa Sensat.
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- Carpenter, T. P., Franke, M. L., Johnson, N. C., Turrou, A. C., y Wagner, A. A. (2017). Young Childrens Mathematics. Cognitively Guided Instruction in Early Childhood Education. Heinemann.
- Cascallana, M. T. (1988). Iniciación a la matemática. Materiales y recursos didácticos. Aula XXI.
- Castro, E., i Castro, E. (2016). Enseñanza y aprendizaje de las matemáticas en educación infantil. Ediciones Pirámide.
- Fuson, K. C. (1988). Childrens counting and concepts of number. Springer-Verlag.
- Gelman, R., y Galistell, C. H. (1978). The Childs Understanding of Number (1986th ed.). Harvard University Press.



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- Leavy, A., Meletiou-Mavrotheris, M., y Paparistodemou, E. (Eds.). (2018). Statistics in Early Childhood and Primary Education. Supporting Early Statistical and Probabilistic Thinking. Springer Singapore. <https://doi.org/10.1007/978-981-13-1044-7>
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- Musser, G. L., Peterson, B. E., y Burger, W. F. (2013). Mathematics for Elementary teachers: A Contemporary Approach (10th ed.). Wiley.
- Puig, L., y Cerdán, F. (1988). Problemas aritméticos escolares. Síntesis.
- Sarama, J., y Clements, D. H. (2009). Early childhood mathematics education research: Learning trajectories for young children. Routledge.
- Van de Walle, J. A., Karp, K. S., y Bay-William, J. M. (2019). Elementary and Middle School Mathematics: Teaching Developmentally (10th ed.). Pearson Education.

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

English version is not available

1. VOLUMEN DE TRABAJO Y PLANIFICACIÓN TEMPORAL DE LA DOCENCIA

Se mantiene el peso de las diferentes actividades que suman las horas de dedicación en créditos ECTS marcadas en la guía docente original.

Se mantiene la planificación temporal docente atendiendo a las indicaciones de la CAT.

2. METODOLOGÍA DOCENTE

Siguiendo las instrucciones de la CAT se combinará la presencialidad con la no presencialidad, síncrona o asíncrona, generando un modelo docente híbrido variable capaz de responder a las circunstancias que puedan afectar a la presencialidad. Siguiendo las consideraciones que sobre la planificación de la docencia han sido adoptadas en la Universitat de València, se organizará la presencialidad de al menos el 50% de los estudiantes de cada asignatura en rotaciones de periodicidad semanal en las aulas, siempre que las condiciones sanitarias lo permiten.

La parte de presencialidad del estudiante se orientará hacia una docencia activa que potencie su participación, atendiendo especialmente la resolución de dudas y la realización de actividades, así como la evaluación continua, ya sea formativa o sumativa, la parte sin duda más sensible y más complicada de resolver a distancia.



3. EVALUACIÓN

Se mantiene el modelo de evaluación que se indica a la guía docente de la asignatura. Los porcentajes referentes a evaluación continua y prueba final podrán ser adaptados (dentro de los márgenes indicados a la guía), con respeto el inicio del curso, dependiendo de la situación. Los elementos que configuran la evaluación continua serán adaptados en línea si fuera necesario. En cuanto a la prueba final, esta se realizará en la hora y día previstos en el calendario oficial. En caso de que esta sea realizada en línea, se utilizarán los medios técnicos disponibles más adecuados. Para evitar la realización fraudulenta de las pruebas de evaluación en línea, el profesorado podrá realizar entrevistas individuales con los estudiantes a través de la videoconferencia para comprobar sus conocimientos relativos a las cuestiones planteadas en las pruebas de evaluación.