COURSE DATA

DATA SUBJECT

Code: 46930
Name: Intervention in Mathematics Learning Difficulties
Cycle: Master's Degree
ECTS Credits: 2.5
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
2276 - Master's Degree in Special Education	Facultat de Filosofia i Ciències de l'Educació	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2276 - Master's Degree in Special Education	Orientación e Intervención en Dificultades de Aprendizaje y Comportamiento	COMPULSORY

COORDINATION

SORIANO FERRER MANUEL

VARGAS PECINO CRISTINA

SUMMARY

The subject "Intervention in learning difficulties in mathematics" is taught in the first year. The teaching responsibility of this subject falls on the Department of Developmental and Educational Psychology. The subject aims to train participants in the detection, evaluation, and intervention of potential problems that may arise in the teaching/learning process, which constitutes one of the most prevalent problems in school age. Thus, this subject is organized around difficulties in numeration, arithmetic calculation, and problem-solving in mathematics. This subject, in addition to providing theoretical foundations, has a practical character based on the analysis and resolution of cases with different types of learning problems.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

There are no prerequisites, although knowledge of developmental psychology and instructional psychology is recommended.

COMPETENCES / LEARNING OUTCOMES

-

Be able to apply current regulations regarding attention to specific educational support needs and in the social context in different situations.

Be able to assess the consequences of different types of difficulties in self-regulation and learning in the social, personal and academic domains.

Collaborate effectively in work teams, assuming responsibilities and leadership roles and contributing to collective improvement and development.

Design and manage assessment and intervention procedures in the field of specific educational support needs.

Have an active commitment to non-discrimination, equal opportunities and equity.

Have the learning skills that allow students to continue to study in a manner that may be largely self-directed or autonomous.

Know and understand the procedures for research, assessment and intervention in the school environment for children with specific educational support needs.

Know the ethical principles of professional action in the field of specific educational support needs.

Know the fundamentals, principles, values and attitudes underlying the right to education of students with specific educational support needs.

Search for, manage and analyse scientific-professional information, technical reports, research and/or evaluation reports on educational actions, processes and results.

DESCRIPTION OF CONTENTS

1. Basic characteristics of mathematical learning difficulties

Basic characteristics of mathematical learning difficulties.
Cognitive and neurobiological factors that are involved.
Development of mathematical skills.

2. Detection, diagnosis and assessment of mathematical learning difficulties

Detection and recognition of warning signs.
Diagnostic criteria, assessment methods and measuring instruments.
Subtypes classification.

3. Intervention in mathematical learning difficulties

Principles of Effective Interventions and instructional methods.
Empirically supported intervention programmes.
Intervention activities and teaching materials (manipulative, computer games, other games, and pencil and paper materials).

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	25,00
Total hours	**25,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	15,00
Independent study and work	20,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	10,00
Total hours	**45,00**

TEACHING METHODOLOGY

The theoretical-practical nature of the specified competencies for this subject will be reflected in the training methodology, structured into two main components. The theoretical component will involve the presentation and systematization of knowledge by the professor, requiring active participation from the student. The practical component will be realized through: 1) Supervised classroom activities, including the analysis of practical cases, viewing graphic documents, interpreting learning difficulties detection protocols, analyzing intervention programs, and presenting work that serves as a basis for debate and discussion activities, & 2) Individual and group work activities.

EVALUATION

In the evaluation of the acquisition of the competences by the students, a combination of different types of information will be made, linked to the different activities that the students develop. Therefore, the evaluation procedures will contemplate:

a) Exam. There will be an examination of objective questions with multiple answers and / or development that will consist in the realization of a written test. This test will have a weight of 60% in the final grade, in addition you must reach a minimum of 50% mastery to pass the course. This requirement is recoverable in second call.

b) Classroom activities. Preparatory activities and developed in the face-to-face sessions. A minimum of 50% must be reached in these activities and will have a weight of 15% in the final grade. In case of non-compliance with this requirement in the first call, the student must complete and pass on the second call an additional evaluation test on the skills worked on in the classroom activities.

c) Compulsory group work. Mandatory group work includes a written report and/or a class presentation. This group work will have a weight of 25% in the final grade. Failure to meet this requirement will not be recoverable on second call, so that those students who have not done so in the first call will have a final maximum score of 7,5 points on second call.

If in the first call no part of the evaluation is exceeded, the grades obtained in the sections already passed for the second call will be retained.

The face-to-face nature of the master's degree requires attendance at classes. As a result, the fulfilment of certain tasks developed in person in the classroom may be required as requirements to overcome the subject.

Fraudulent conduct in assessment tests and plagiarism in assessment work will be considered in accordance with the UV Assessment and Grading Regulations (ACGUV 108/2017) and the Protocol for Action against Fraudulent Practices (ACGUV 123/2020).

The use of technologies (including AI) to create assessment materials without prior and express authorization from the teaching staff will prevent them from being considered as self-authored and will be treated according to current regulations and the UV Code of
Coexistence and Good Practices (ACGUV 300/2023, DOGV, no. 9747/18.12.2023).

REFERENCES

- De León, S. C. y Jiménez, J. E. (2019a). Modelo de respuesta a la intervención y matemáticas: estrategias instruccionales basadas en la evidencia científica. En J. E. Jiménez (Ed.), Modelo de Respuesta a la Intervención. Un enfoque preventivo para el abordaje de las dificultades específicas de aprendizaje (pp. 291-348). Ediciones Pirámide. De León, S. C. y Jiménez, J. E. (2019b). Modelo de respuesta a la intervención y matemáticas: principales habilidades y detección temprana. En J. E. Jiménez (Ed), Modelo de Respuesta a la Intervención. Un enfoque

preventivo para el abordaje de las dificultades específicas de aprendizaje (pp. 249-389). Ediciones Pirámide. Defior, S., Serrano, F. y Gutiérrez, N. (2015). Dificultades específicas del aprendizaje. Editorial Síntesis. Karagiannakis, G., Baccaglini-Frank, A. y Papadatos, Y. (2014). Mathematical learning difficulties subtypes classification. Frontiers in Human Neuroscience, 8. https://doi.org/10.3389/fnhum.2014.00057 National Center on Intensive Intervention (2016). Principles for designing intervention in mathematics. Office of Special Education, U.S. Department of Education. Roca Ruíz, J. y Vargas Pecino, C. (2018). Alumnado con trastorno Específico del Aprendizaje. En D. Marín Suelves e I. Fajardo Bravo (Eds.), Intervención Psicoeducativa en alumnado con Necesidades Específicas de Apoyo Educativo (pp. 83-113). Tirant lo Blanch.

- Jiménez, J. E. y De León, S. (2019). Indicadores de Progreso de Aprendizaje en Matemáticas (IPAM). En J. E. Jiménez (Ed.), Modelo de Respuesta a la Intervención. Un enfoque preventivo para el abordaje de las dificultades específicas de aprendizaje. https://www.edistribucion.es/piramide/materialcomplementario/262558/html/fourth_level.htm?level0=0&level1=2&level2=0 Karagiannakis, G., Baccaglini-Frank, A. E., y Roussos, P. (2016). Detecting strengths and weaknesses in learning mathematics through a model classifying mathematical skills. Australian Journal of Learning Difficulties, 21(2), 115-141. Miranda, A., Fortes, C. y Gil, M. D. (1998). Dificultades de aprendizaje de las matemáticas: un enfoque evolutivo. Aljibe. Soriano, M. (2014). Dificultades de Aprendizaje. GEU Texto referencia. Vargas Pecino, C. y Roca Ruíz, J. (2022). Casos prácticos de alumnado con Trastorno Específico del Aprendizaje. En D. Marín Suelves e I. Fajardo Bravo (Eds.), Casos Prácticos de Alumnado con Necesidades Específicas de Apoyo Educativo (pp. 17-37). Tirant lo Blanch.