

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

Code	42710
Name	Developments in neuroscience of language
Cycle	Master's degree
ECTS Credits	10.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
2119 - M.U. en Especialización en Intervención Logopédica	Faculty of Psychology and Speech Therapy	1	First term

Subject-matter

Degree	Subject-matter	Character
2119 - M.U. en Especialización en Intervención Logopédica	1 - Developments in neuroscience of language	Obligatory

Coordination

Name	Department
ROSELL CLARI, VICENTE JOSE	300 - Basic Psychology

SUMMARY

The subject "Advances in Language Neuroscience" is a compulsory four-month course in the Master of Speech Therapy. It consists of 10 credits to be taken in the first four-month period and has a theoretical-practical nature.

In the first block, the main neurolinguistic paradigms are described (traditional, cognitive, and pragmatic-functional), focusing on the implications of speech therapy assessment and rehabilitation in patients with brain damage (aphasia and dementia), as well as the study and description of the most important characteristics of these patients.

In the second block, knowledge is provided on psycholinguistic aspects of bilingualism: development of bilingualism, neurocognitive types and consequences, code switching, lexical organization, bilingual brains, and implications of bilingualism in speech therapy intervention in the family, clinical and educational context.



The aim of teaching the course is for students to assimilate its contents, handle them in a practical way and be able to apply them in a real way both to research and to professional speech therapy practice.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

It is recommended that the student has basic knowledge of Neurology, Neurophysiology, Anatomy and Physiology of Language Production and Comprehension, as well as the most common Pathologies and basic computer notions.

OUTCOMES

2119 - M.U. en Especialización en Intervención Logopédica

- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Establecer pronósticos de evolución de acuerdo con las características específicas del paciente.
- Seleccionar criterios adecuados para evaluar la efectividad del tratamiento y las posibles modificaciones.
- Aplicar la metodología científica a la hora de observar, registrar, y comprobar la efectividad y consecuencias de los planes de intervención para fomentar el avance científico de la disciplina.
- Conocer y valorar de forma crítica diferentes aspectos de la investigación en el ámbito de la Logopedia.
- Adoptar un compromiso ético con los derechos humanos, la igualdad de oportunidades y la no discriminación por razones de género, edad, creencias, discapacidad o por otras razones.
- Registrar, sintetizar e interpretar los datos recogidos a partir de los avances tecnológicos, integrándolos en el conjunto de la información del paciente y comunicarlos de manera comprensible a los diferentes agentes implicados en el enfoque terapéutico.
- Integrar la información procedente de diferentes especialistas para poder ofrecer un diagnóstico coherente del paciente.
- Formular pronósticos de evolución en función de los datos procedentes de los diferentes especialistas que integran el equipo multidisciplinar.



LEARNING OUTCOMES

- Describe and explain the major implications for human communication of the anatomophysiological changes associated with brain damage.
- To plan the assessment of language and metalanguage in patients with injuries to structures associated with communication and to interpret the data from this assessment for rehabilitation.
- Handling the software and technical and computer resources used in the rehabilitation of patients with aphasia and dementia in speech therapy.
- Describe and explain the neurophysiological changes associated to bilingualism and the main implications in communication.
- To know the implications of bilingualism in speech therapy intervention in the family, clinical and educational context.

DESCRIPTION OF CONTENTS

1. Advances in exploration of language and their rehabilitation in patients with brain damage.

- 1.- Neurological pathologies and language disorders.
- 2.- Traditional, cognitive and pragmatic-functional aphasiological paradigms of linguistic processing.
- 3.- Logopedic rehabilitation in Aphasia, from semiological or symptomatic rehabilitation to functional rehabilitation.
- 4.- Computer programs and other useful technological resources for language rehabilitation.

2. Psycholinguistic aspects of bilingualism

1. Linguistic development in bilingual contexts
 - Acquisition contexts.
 - The role of input.
 - Simultaneous vs. sequential language acquisition.
 - Subtractive vs. additive bilingualism.
2. Neurocognitive consequences of bilingualism.
 - Code switching.
 - Organization of the lexicon.
 - Critical period.
 - Bilingual brains.
 - Bilingualism in speech therapy intervention: family, clinical and educational context

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	45,00	100
Classroom practices	30,00	100
Laboratory practices	15,00	100
Tutorials	10,00	100
Development of group work	20,00	0
Study and independent work	130,00	0
TOTAL	250,00	

TEACHING METHODOLOGY

- Theoretical classes with presentation by the teacher and student participation in discussion and reflection on issues of oral or written.
- Seminars and activities in the classroom or laboratory supervised by the teacher that include resolution of cases, management specific software, performing presentation before the group work, discussion and conclusion.
- Activities of teamwork.
- Individual and group tutoring.

EVALUATION

The student's evaluation will result in a grade ranging from 0 to 10 points. These grades represent: from 5 points, passed; from 7 points, notable; from 9 points, excellent; 10 points, excellent proposed for honors.

This grade is a function of the weighted sum of the evaluations of each of the modules that make up the course according to the number of credits that have been taught in relation to the total (P. e.: For a module of 2 credits the percentage in the final grade of the course (10 credits) is 20%). The evaluation of the course will be carried out continuously and, in the times, programmed by the different teachers of each one of the modules that compose it. The continuous evaluation will be made from the reports on practical cases discussed and carried out in class or in seminars, individual or group works, and activities proposed in the different classes of the course.

Class attendance is compulsory and to pass the course you will need to attend at least 80% of the classes. Non-attendance must be due to well-documented reasons of force majeure (supervening health condition, death of a relative up to the third degree, court summons, official examination, accompanying a first-degree relative for medical reasons). The contents and activities carried out in the classroom classes are considered recoverable through specific work, except for activities that require instruments, techniques, materials or contents, which cannot be repeated or simulated (e.g.: videos, audios and other materials that are part of real clinical cases). Each teacher responsible for the module to be taught will inform the students which contents are recoverable and which are not, as well as how and when they will be



recovered.

There are no differences between the first and second sitting. In the case of having to recover a module of the subject, the marks of the other modules in which the student has passed will be kept for the second exam.

The matriculation with honors (MH) will be awarded to those students whose grade in the subject is equal to or higher than 9.2, the highest in their group. The awarding of an honors degree is subject to the completion of an extraordinary oral exam in the event that two students have the same mark and it is only possible to award an MH. This test will in no case subtract marks.

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REFERENCES

Basic

- Rosell-Clari, V. & Hernández-Sacristán, C. (Coordinadores) (2014). MetAphAs. Protocolo de Exploración de Habilidades Metalingüísticas Naturales en la Afasia. Nau Llibres (Valencia).
- Peña-Casanova, J., & Cáceres-Guillén, I. (2019). Programa integrado de exploración neuropsicológica: Test Barcelona-2. Test-Barcelona Services, SL.
- Pérez, M.A. y García, J. (2019). Intervención neuropsicológica en los Trastornos Adquiridos del Lenguaje. Madrid, Síntesis.
- Terradillos, E. & López-Higes, R. (2016). Guía de intervención logopédica en las afasias. Síntesis.

Additional

- Ada, A. F., Campoy, F. I., & Baker, C. (2017). Guía para padres y maestros de niños bilingües: 2. Multilingual Matters.
- Costa, A. (2017). El cerebro bilingüe: la neurociencia del lenguaje. Debate
- García-Molina, A, y Peña-Casanova, J. (2022). Fundamentos históricos de la Neuropsicología y la Neurología de la conducta. Test Barcelona Services SL
- Rosell Clari, V., Cervera Crespo, T. y Hernández Sacristán, C. (coords.). (2018). Lenguaje y funcionamiento ejecutivo. Una perspectiva pluridisciplinar. Tirant lo Blanch.



- Schwieter, J. W. (Ed.). (2019). The Handbook of the Neuroscience of Multilingualism. Wiley Blackwell.
- Valles González, B. (2014). Programa de Estimulación Metalingüística en Teoría de la Mente para personas con demencia. Edición: Beatriz Valles González.

