

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

<b>Code</b>	35274
<b>Name</b>	Neurology and Language Neuropsychology
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	9.0
<b>Academic year</b>	2021 - 2022

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
1203 - Degree in Speech Therapy	Faculty of Psychology and Speech Therapy	1	Annual

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1203 - Degree in Speech Therapy	3 - Biology	Basic Training

**Coordination**

<b>Name</b>	<b>Department</b>
ARENAS FENOLLAR, M.CARMEN	268 - Psychobiology
FERNANDEZ RODRIGUEZ, CONRADO ANTONIO	260 - Medicine

**SUMMARY**

The subject of Neurology and Neuropsychology and Language General is responsible for providing students with the current basic knowledge you have on Neuroscience, providing an anatomical and physiological basis of the human nervous system, the basis of higher cognitive functions. It also allows to acquire the knowledge necessary for him / the student to attend next subjects assigned to the area of knowledge of Psychobiology This course consists of a anatomophysiological part of the nervous system, allowing the student to know what is the macro-and microscopic organic substrate - on which rests the human thought and language is an essential part. In a second part of the basic procedures that Neuroscience develops its work so that the student is familiar with the main neurological techniques are discussed. In a third part explains the basic pathology developing different forms of illness that can present the nervous system and its distinguishing characteristics. In a fourth section addresses the concept and methods of study in Neuropsychology. In the fifth block hemispheric specialization study in relation to language. In the sixth block the main causes of language disorders is reviewed and, finally, the neuropsychological disorders of language are discussed.



This course provides the necessary subsequent to correctly understand subjects as compulsory subject in the third year of Grade "Speech therapy intervention in brain injury" which addresses the neuropsychological intervention skills, the second year compulsory subject "neurodegenerative disorders" and Compulsory third-year "Speech therapy intervention in neurodegenerative disorders" in which focuses on the field of dementia and neuropsychological and speech therapy.

The aim is that the degree in Speech basic know how the human nervous system and thus can meet the challenges that their profession poses. These diagnosis and rehabilitation of pathological conditions such as brain damage, knowledge of the basis on which intelligence and human language is based, from a normal and pathological, and work in teams is strong multidisciplinary character.

## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

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

### Other requirements

Since this course belongs to the first year of college and has a basic character, no prior knowledge is required; However no previous knowledge of biology, anatomy and physiology are recommended for greater and faster uptake of the subject.

## COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

### 1203 - Degree in Speech Therapy

- Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.
- Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.
- Explore, evaluate, diagnose and predict the evolution of communication and language disorders from a multidisciplinary perspective.
- Know the limits of their field of activity and learn to identify when an interdisciplinary treatment is necessary.
- Develop communication skills in the general population.
- Understand and critically evaluate the terminology and research methodology of speech therapy.



- Hold interconsultations and make referrals to other healthcare and education professionals.
- Know the normal development of language.
- Learn the different neuropsychological disorders, their diagnostic techniques and their main causes.
- Be able to perform a brief neuropsychological assessment of a real case.
- Be trained to prepare a neuropsychological report of a real clinical case.
- Know the procedure of neuropsychological evaluation.

## **LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)**

To know and be able to describe the structure of the nervous system and identify its parts.

To know and be able to describe the neurophysiology of perception.

Be able to differentiate the phases of neurodevelopment

To know and be able to describe the different techniques used in the Neuropsychology of Language and their application to the study of hemispheric specialization and communication disorders.

## **DESCRIPTION OF CONTENTS**

### **1. General Neurology and language: Anatomophysiology the human nervous system.**

In this block the anatomical and physiological concepts are developed, deepening those who are most important to the function of language. Special emphasis will be placed on the brain mechanism that enables human language and its pathophysiology.

### **2. General and language Neurology: Neurological methodology**

Different methods for assessing the nervous system will be discussed, highlighting the diagnostic process in Neurology and the different tools that the current technology available to professionals who face various neurological disorders.

### **3. General and language Neurology: Neurological Pathophysiology**

Be explained from a causal-clinically neuropathology, ie, different types of diseases that can affect the human nervous system by etiology and differential characteristics for the student to become familiar with the various types of patients seen in the development of their professional career.



#### **4. Concept and historical development of Neuropsychology: Neuropsychology general and language.**

Neuropsychology concept and its relationship to the psychobiology and neuroscience will be discussed as well as their characteristics and different orientations. Greater emphasis will be placed on all aspects of progress in Neuropsychology of Language.

The phylogenetic origin of the language will also be developed in this block, both in the theoretical classes and in the practical classes, showing and discussing the current theories and their main arguments, and analyzing in depth the advances in language genetics.

#### **5. General and neuropsychology of language: Hemispheric specialization and language**

The main hemispheric specializations, both functional, anatomical and biochemical, will be presented, developing those related to linguistic processes to a greater extent. For this, the studies on divided brain and the main methodologies used in this field will be analyzed, both from a theoretical and practical perspective. The main gender differences in hemispheric specialization and language will also be identified.

#### **6. General and language Neuropsychology: Neuropsychological impairment of language.**

Semiotics of aphasic disorders, major neural models of language exploration areas and different types of aphasia are discussed. Alexia, dyslexia, agrafias, aprosodias, dysphasia, and apraxia acalculia: neuropsychological other language will also be identified.

#### **7. Neuropsychological Intervention: general and neuropsychology of language.**

The different areas of action will reason from neuropsychology, analyzing the possible recovery of function. The main theories of functional recovery will be described, determinants and recovery mechanisms in the central nervous system comprising.

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	60,00	100
Laboratory practices	30,00	100
Study and independent work	135,00	0
<b>TOTAL</b>	<b>225,00</b>	

**TEACHING METHODOLOGY**

- Theoretical-face classes: content presentation, presentation of audiovisual material, discussion of the contents in the classroom.
- Practical classes and seminars on the topics indicated in the Description of Contents section.
- Student work: preparation and defense of work, discussion of content seen in the theoretical and practical classes, search for information on the subject matter of study, etc.
- Tutorias programmed individual and / or in small groups.
- Study of the student, preparation and performance of the evaluation tests.
- The duration of each activity is divided between the two quarters equally, taking into account the volume of work specified in this guide.

**EVALUATION**

- Assessment of theoretical and practical contents through a written test (question solving and similar challenges to those seen in class, both theoretical and practical sessions) about the level of knowledge acquired by the student. A test will be performed about the contents of Neurology (first semester) and an additional test about the contents of Neuropsychology (second semester). This will account for 70% of the final mark. This block of the assessment can be retaken in the second call. The final mark will be calculated by averaging the mark obtained in the first semester (Neurobiology) and the mark obtained in the second semester (Neuropsychology), as long as both marks are above or equal to 50%.
- Oral or written presentation of reports individually or in groups, which will show that the student has developed knowledge skills, comprehension and application of the contents in the course (20% of the final mark). The mark obtained in this block will be carried onto the 2nd call. Those students who did not fulfil this task will only be able to keep the part of this percentage that has not been evaluated with group work and / or classroom expositions can be recovered, performing the evaluation that the teacher considers it appropriate on the day of the exam of the second call (by writing an individual project or by sitting a test, in addition to the exam of theoretical and practical contents described in the previous block).





- A continuous assessment will be performed, covering the theoretical and practical contents as well as the student's skills, through active participation in the class activities, seminars or workshops. The works related to these activities will be handed in at the end of the session or within the deadline established by the professor. The students will always be provided with the correction of the works, whether individual or collective. This will account for a 10% of the final mark and under no circumstances can it be kept in the second call.

#### Minimum requirements:

To pass the course, students must achieve a minimum score of 50% in the first block of assessment (evaluation of theoretical and practical knowledge through a written test) both in the first test about the contents from the first semester and in the test about the contents from the second semester.

## REFERENCES

### Basic

- CUETOS, F. (2012). Neurociencia del lenguaje. Bases neurológicas e implicaciones clínicas. Editorial Médica Panamericana. Madrid.
- GÓNZALEZ LAZARO, P. y GONZALEZ ORTUÑO, B. (2012). Afasia. De la teoría a la práctica. Ed. Médica Panamericana, Madrid.
- DIÉGUEZ-VIDE, F.; PEÑA-CASANOVA J. (2012). Cerebro y Lenguaje. Sintomatología Neurolingüística. Ed. Médica Panamericana, Madrid.
- GONZÁLEZ-LÁZARO, P. y GONZÁLEZ-ORTUÑO, B. (2012). Afasia. De la teoría a la práctica. Ed. Médica Panamericana, Madrid.
- JUNQUE, C., BRUNA, O. y MATARÓ, M. (2004). Neuropsicología del Lenguaje. Masson, Barcelona.
- LOVE, R.J, WEBB, W.G., KIRSHNER, H.S., y cols (2001). Neurología para los especialistas del habla y del lenguaje (3ªed.). Ed. Médica Panamericana, Buenos Aires.
- PEÑA CASANOVA, J. (2007). Neurología de la Conducta y Neuropsicología. Ed. Médica Panamericana.
- ROPPER, A.H., SAMUELS, M.A., KLEIN, J.P. y cols. (2017). Adams y Victor, principios de neurología. Ed. McGraw-Hill/Interamericana, México.
- WEBB, W.G. y ADLER, R.K. (2010). Neurología para el logopeda (5ªed.). Ed. Elsevier, Madrid.

### Additional

- - ARDILA A. (2008) Neuropsicología del lenguaje. En: TIRAPU J., RIOS-LAGO M. MAESTÚ F. (Eds.) Manual de Neuropsicología. Viguera Editores, Barcelona. Pp. 97-121.
- - ARNEDO, M.; BEMBIBRE, J.; TRIVINO, M. (2012). Neuropsicología. A través de casos clínicos. Ed. Médica Panamericana, Madrid.
- - BRUNA, O.; ROIG, T.; PUYUELO, M.; JUNQUÉ C. Y RUANO, A. (2011). Rehabilitación neuropsicológica. Intervención y práctica clínica. Elsevier, Masson. Barcelona.
- - GIL, R. (2007). Neuropsicología (4ª edición). Elsevier Masson, Barcelona.
- - JUNQUE, C. y BARROSO, J. (2009). Manual de Neuropsicología. Síntesis Psicología, Madrid.



- LEON-CARRION, J. (2007). Daño Cerebral. Ed. Debate.

## **ADDENDUM COVID-19**

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

### **1. CONTENTS**

There are no modifications regarding the contents that appear in the teaching guide for the subject.

### **2. VOLUME OF WORK AND TEMPORARY PLANNING OF TEACHING**

The volume of work that appears in the teaching guide of the subject is maintained.

During the second semester, as has been done during the first semester of the subject, 100% of the theoretical classes will be held virtually, and 100% of the practical classes will be held in person (if the health situation allows it). The distribution of the volume of work contemplated in the Teaching Guide is not affected.

### **3. TEACHING METHODOLOGY**

The subject will follow a hybrid model of blended teaching.

Theoretical classes, in accordance with the provisions for the entire degree, will be taught non-face-to-face. The materials will be made available to the students through the Virtual Classroom and the classes will be taught synchronously according to the class schedule established by the faculty.

The practical classes will be face-to-face. In the event that the sanitary conditions so require, the internship sessions will be adapted to the online format and will be extended by the time determined by the Academic Degree Committee in accordance with the guidelines received from the Rectorate, being taught synchronously according to the class schedule established by the faculty and using materials designed for non-face-to-face learning through virtual classroom resources.

The tutorials will be carried out through the institutional email of the University of Valencia. If deemed appropriate, tutorials may be held by videoconference in the Virtual Classroom environment.

### **4. EVALUATION**

In the evaluation of the subject, both in the first and in the second semester, the continuous evaluation system is prioritized. In the event that students must take the final performance test of the module, due to not having attended the minimum required and / or not having carried out the proposed activities of continuous assessment, the final test will be carried out in the established format of objective questions that appears in the teaching guide of the subject.

The final grade for the course in each semester, according to the blended stage and according to the potential totally online scenario, is obtained from: 1) between 30-50% of continuous evaluation, 2)



between 50-70% of final test. The final weight will depend on the teaching circumstances: a) in the case of blended teaching, 30% of continuous assessment and 70% of final test; b) in the case of online teaching or, if it is not feasible to take a final face-to-face test, 50% continuous assessment and 50% final test.

Any other aspect not included in this evaluation section is maintained but that is reflected in the evaluation section of the teaching guide of the subject.

The final tests will be held in accordance with the regime determined by the agreements of the Governing Council in force at all times. In the event that health circumstances prevent the realization of face-to-face evaluation tests, these will be articulated through the virtual classroom.

## 5. BIBLIOGRAPHY

To what is already indicated in the Teaching Guide, the following is added:

The UV Library Service makes available to students access to online manuals. In addition, a compilation of materials available online will be included in the Virtual Classroom of the subject.