

# Postgraduate Diploma

## Neuroscience and Psychopathology of Language



## Postgraduate Diploma Neuroscience and Psychopathology of Language

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-neuroscience-psychopathology-language](http://www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-neuroscience-psychopathology-language)

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01

# Introduction to the Program

Neuroscience of Language has made significant advances in understanding how the brain processes and stores words. Traditionally, it was recognized that the left hemisphere, including Broca's and Wernicke's areas, played a central role in speech production and comprehension. However, recent research from Harvard University has revealed that the prefrontal cortex is also crucial in the real-time encoding of word meanings. These findings offer new perspectives for addressing language disorders, such as aphasia, by identifying additional brain areas involved in language processing. Within this framework, TECH has designed a comprehensive 100% online program based on the revolutionary Relearning methodology, pioneered by this institution.





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*With this 100% online Postgraduate Diploma, you will gain access to specialized knowledge in the diagnosis, treatment, and intervention of Language and Communication Disorders, based on the latest scientific advances”*

Neuroscience and Psychopathology of Language have experienced significant advances thanks to the integration of technologies such as functional neuroimaging and Artificial Intelligence. These tools have enabled a more accurate understanding of the brain mechanisms involved in language disorders such as Aphasia, Dyslexia, and Autism Spectrum Disorders (ASD).

This is how this Postgraduate Diploma was created, whose content will include the study of the main structures of the central and peripheral nervous systems, with an emphasis on their role in communication processes. Likewise, the neurobiological bases of language and speech will be addressed, with an analysis of the brain areas involved in their production, comprehension, and motor control. The interactions between the sensory and motor structures responsible for speech production will not be overlooked, providing an anatomical and functional overview that is essential for clinical practice.

Physicians will also be trained in the use of diagnostic tests and in explaining advanced research techniques in language neuropsychology. In addition, the design of appropriate interventions will be encouraged based on the analysis of linguistic profiles and interdisciplinary data, ensuring comprehensive and personalized care for each case.

Finally, diagnostic assessment techniques and the preparation of comprehensive speech therapy reports will be explored in depth for intervention in various contexts, such as family, school, and clinical settings, using strategies and resources tailored to the needs of patients. This will also include the planning, implementation, and assessment of therapeutic programs that promote the improvement and recovery of affected language functions.

In this way, TECH has created a comprehensive 100% online program with materials and resources of the highest educational quality, accessible from any electronic device with an Internet connection. This will eliminate inconveniences such as traveling to a physical location or adapting to fixed schedules. Additionally, it will employ the innovative Relearning methodology, based on the constant repetition of key concepts to facilitate efficient and natural assimilation of content.

This **Postgraduate Diploma in Neuroscience and Psychopathology of Language** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ♦ Practical cases presented by experts in medicine
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Special emphasis on innovative methodologies in Neuroscience and Psychopathology of Language
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*This Postgraduate Diploma in Neuroscience and Psychopathology of Language will offer complete training to physician who wish to specialize in the neurobiological and clinical aspects of language disorders"*

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*TECH offers you an innovative teaching methodology, aligned with the latest advances in the educational field”*

*This program offers you a wide variety of practical resources that will help you consolidate your theoretical knowledge.*

*A completely online program that allows you to study anytime, anywhere in the world.*

Its teaching staff includes professionals from the field of medicine, who bring to this program the experience of their work, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive educational experience designed to prepare students for real-life situations.

This program is designed around Problem-Based Learning, whereby students must try to solve the different professional practice situations that arise during the academic year. For this purpose, professionals will be assisted by an innovative interactive video system created by renowned and experienced experts.





02

# Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.





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*Study at the world's largest online university  
and guarantee your professional success.  
The future starts at TECH”*

### The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

### The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

### The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



### The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

### A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

#### The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

#### Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



#### Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



#### The top-rated university by its students

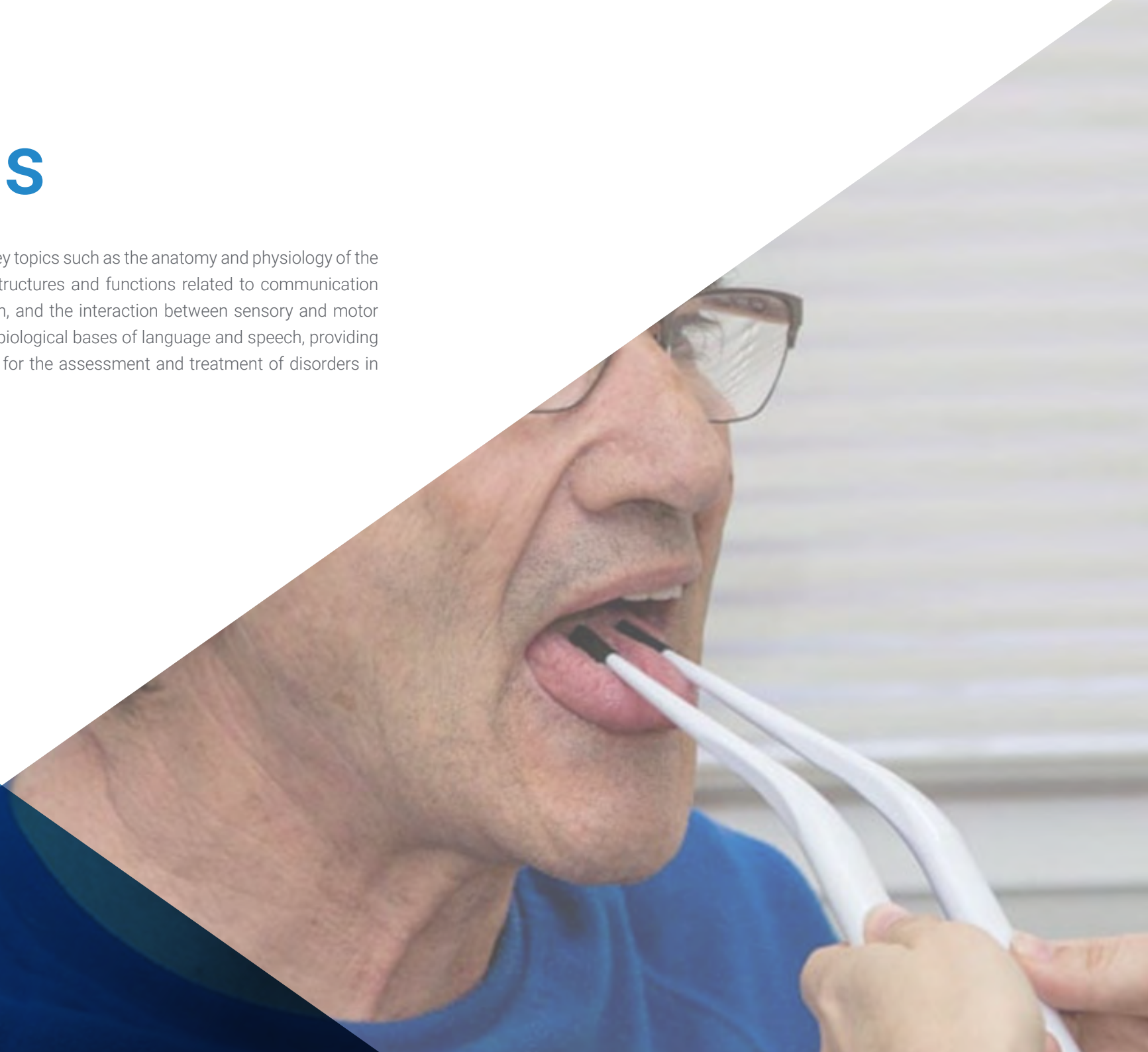
Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.





# 03 Syllabus

This university program will cover key topics such as the anatomy and physiology of the nervous system, highlighting the structures and functions related to communication processes, motor control of speech, and the interaction between sensory and motor systems. It also explores the neurobiological bases of language and speech, providing an essential theoretical framework for the assessment and treatment of disorders in these areas.



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*The syllabus has been designed to enable you to understand and address Language Disorders from a neurobiological and clinical perspective, always with the support of the Relearning methodology”*

## Module 1. Anatomy and Physiology of the Nervous System

- 1.1. Introduction and Overview of the Nervous System
  - 1.1.1. Definition and Functions of the Nervous System
  - 1.1.2. Nervous System Classification
    - 1.1.2.1. Anatomical Classification
    - 1.1.2.2. Functional Classification
  - 1.1.3. Evolution and Development of the Nervous System
  - 1.1.4. Clinical Importance of Studying the Nervous System
- 1.2. Cellular Organization of the Nervous System
  - 1.2.1. Main Types of Cells
    - 1.2.1.1. Neurons
    - 1.2.1.2. Glial Cells
  - 1.2.2. Structure and Function of Neurons
    - 1.2.2.1. Soma
    - 1.2.2.2. Dendrites
    - 1.2.2.3. Axon
  - 1.2.3. Synapses and Neuronal Communication
  - 1.2.4. Neurotransmitters and Receptors
- 1.3. Anatomical Organization of the Nervous System: Central and Peripheral
  - 1.3.1. Central Nervous System (CNS)
    - 1.3.1.1. Brain
    - 1.3.1.2. Spinal Cord
  - 1.3.2. Peripheral Nervous System (PNS)
    - 1.3.2.1. Cranial Nerves
    - 1.3.2.2. Spinal Nerves
    - 1.3.2.3. Peripheral Ganglia
  - 1.3.3. Connections between the CNS and PNS
- 1.4. Spinal Cord, Brain Stem, and Cerebellum
  - 1.4.1. Spinal Cord
    - 1.4.1.1. Anatomical Organization
    - 1.4.1.2. Sensory and Motor Function





- 1.4.2. Brain Stem
  - 1.4.2.1. Medulla Oblongata
  - 1.4.2.2. Protuberance
  - 1.4.2.3. Midbrain
- 1.4.3. Cerebellum
  - 1.4.3.1. Anatomy of the Cerebellum
  - 1.4.3.2. Functions of the Cerebellum
  - 1.4.3.3. Cerebellar Connections
- 1.5. Diencephalon, Limbic System, and Basal Ganglia
  - 1.5.1. Diencephalon
    - 1.5.1.1. Thalamus
    - 1.5.1.2. Hypothalamus
    - 1.5.1.3. Epithalamus
  - 1.5.2. Limbic System
    - 1.5.2.1. Principal Components
    - 1.5.2.2. Function in Emotions and Memory
  - 1.5.3. Basal Ganglia
    - 1.5.3.1. Anatomical Structures
    - 1.5.3.2. Function in Motor Control
- 1.6. Cerebral Hemispheres
  - 1.6.1. Cerebral Lobes
    - 1.6.1.1. Frontal Lobe
    - 1.6.1.2. Parietal Lobe
    - 1.6.1.3. Temporal Lobe
    - 1.6.1.4. Occipital Lobe
  - 1.6.2. Hemispheric Functions
    - 1.6.2.1. The Left Hemisphere
    - 1.6.2.2. The Right Hemisphere
  - 1.6.3. Cerebral Cortex
    - 1.6.3.1. Sensory, Motor, and Association Areas
- 1.7. Vascularization of the Central Nervous System, Ventricular System, and Meninges
  - 1.7.1. Vascularization of the CNS
    - 1.7.1.1. Anterior Circulation: Carotid Arteries
    - 1.7.1.2. Posterior Circulation: Vertebrobasilar System
    - 1.7.1.3. Blood-Brain Barrier
  - 1.7.2. Ventricular System
    - 1.7.2.1. Cerebral Ventricles
    - 1.7.2.2. Circulation of Cerebrospinal Fluid
  - 1.7.3. Meninges
    - 1.7.3.1. Dura Mater
    - 1.7.3.2. Arachnoid Mater
    - 1.7.3.3. Pia Mater
- 1.8. Spinal Nerves and Cranial Nerves
  - 1.8.1. Spinal Nerves
    - 1.8.1.1. Organization and Plexuses
    - 1.8.1.2. Dermatomes and Myotomes
  - 1.8.2. Cranial Nerves
    - 1.8.2.1. Functions
    - 1.8.2.2. Main Pathways
- 1.9. Neuromotor Control of Speech
  - 1.9.1. Motor Pathways Involved
    - 1.9.1.1. Pyramidal Pathway
    - 1.9.1.2. Extrapyramidal Pathway
  - 1.9.2. Brain Areas Related to Speech
    - 1.9.2.1. Broca's Area and Supplementary Motor Area
    - 1.9.2.2. Primary Motor Cortex

- 1.10. Neurological Principles of Language
  - 1.10.1. Brain Structures Related to Language
    - 1.10.1.1. Characterization of Broca's and Wernicke's Areas: Location and Specific Functions
    - 1.10.1.2. Role of the Arcuate Fasciculus in the Connection Between Language Areas
    - 1.10.1.3. Contribution of the Right Hemisphere in Non-Verbal Aspects of Language
  - 1.10.2. Neural Processes in Language Acquisition and Production
    - 1.10.2.1. Brain Plasticity and Its Influence on Language Acquisition
    - 1.10.2.2. Neuronal Activation During Language Comprehension and Production
    - 1.10.2.3. Participation of the Basal Ganglia and Cerebellum in Linguistic Processes
  - 1.10.3. Neurological Disorders and Their Impact on Language
    - 1.10.3.1. Types of Aphasia: Clinical Characteristics and Affected Areas
    - 1.10.3.2. Language Disorders in Neurodegenerative Diseases (e.g., Alzheimer's, Parkinson's)
    - 1.10.3.3. Impact of Traumatic Brain Injury on Language Function

## Module 2. Neuropsychology of Language

- 2.1. Neuropsychology and Speech Therapy
  - 2.1.1. Basic Concepts
    - 2.1.1.1. Definition of Neuropsychology
    - 2.1.1.2. Relationship between Neuropsychology and Speech Therapy
    - 2.1.1.3. Cognitive Functions and their Relationship with Language
  - 2.1.2. Assessment Methodologies
    - 2.1.2.1. Neuroimaging Techniques
    - 2.1.2.2. Neuropsychological Assessment of Language
  - 2.1.3. Technique and Approach Route
    - 2.1.3.1. Interdisciplinary Approach to Speech Therapy
    - 2.1.3.2. Techniques for Neuropsychological Rehabilitation of Language
    - 2.1.3.3. Speech Therapy Strategies for the Treatment of Cognitive and Communicative Disorders
- 2.2. Neuroanatomical Bases of Language
  - 2.2.1. Brain Structures Involved
    - 2.2.1.1. Broca's and Wernicke's Areas
    - 2.2.1.2. Angular Gyrus and its Role in Reading
    - 2.2.1.3. Temporal Lobe and Its Relationship with Comprehension

- 2.2.2. Brain Connections
  - 2.2.2.1. Arcuate Fasciculus
  - 2.2.2.2. Interhemispheric Connections
- 2.2.3. Left vs. Right Brain in Language
  - 2.2.3.1. Hemispheric Dominance
  - 2.2.3.2. Function of the Right Hemisphere in Non-verbal Language
- 2.3. Neurocognitive Processes of Language
  - 2.3.1. Language Comprehension
    - 2.3.1.1. Phonological and Lexical Decoding
    - 2.3.1.2. Semantic and Pragmatic Comprehension
  - 2.3.2. Language Production
    - 2.3.2.1. Phonological Processing
    - 2.3.2.2. Lexical, Syntactic and Semantic Processing
  - 2.3.3. Memory and Language
    - 2.3.3.1. Verbal Working Memory
    - 2.3.3.2. Long-Term Memory and Language
- 2.4. Neuronal Plasticity and Language
  - 2.4.1. Concept of Brain Plasticity
    - 2.4.1.1. Definition and Types of Brain Plasticity
    - 2.4.1.2. Factors Influencing Brain Plasticity
  - 2.4.2. Mechanisms of Neuronal Plasticity
    - 2.4.2.1. Synaptic Plasticity and its Role in Learning
    - 2.4.2.2. Neurogenesis and its Implication in Brain Repair
  - 2.4.3. Impact of Plasticity on Language Recovery
    - 2.4.3.1. Adaptation Mechanisms in Language Disorders
    - 2.4.3.2. Cortical Plasticity in Language Restructuring
  - 2.4.4. Age and Plasticity
    - 2.4.4.1. Effects of Early Age on Neuronal Plasticity
    - 2.4.4.2. Plasticity in Adulthood and its Relationship with Language Learning
  - 2.4.5. Brain Rehabilitation and Stimulation
    - 2.4.5.1. Brain Stimulation Techniques for Language Rehabilitation
    - 2.4.5.2. Speech Therapies and their Impact on Neuronal Plasticity

- 2.5. Neurobiological Language Disorders in Children
  - 2.5.1. Speech Disorders
    - 2.5.1.1. Speech Disorders
    - 2.5.1.2. Childhood Apraxia
    - 2.5.1.3. Childhood Dysarthria
  - 2.5.2. Language Disorders
    - 2.5.2.1. Specific Language Impairment (SLI)
    - 2.5.2.2. Developmental Language Disorder
    - 2.5.2.3. Simple Language Delay
  - 2.5.3. Related Disorders and Neurodevelopmental Disorders
    - 2.5.3.1. Acquired Childhood Aphasia
    - 2.5.3.2. Autism Spectrum Disorder
    - 2.5.3.3. Down Syndrome
    - 2.5.3.4. Cerebral Palsy
- 2.6. Neuropsychological Assessment of Language in Children
  - 2.6.1. Assessment Techniques
    - 2.6.1.1. Standardized Tests
    - 2.6.1.2. Clinical and Observational Assessment
  - 2.6.2. Specific Neuropsychological Instruments
    - 2.6.2.1. Verbal Fluency Assessment
    - 2.6.2.2. Language Development Scales
  - 2.6.3. Interpretation of Results
    - 2.6.3.1. Analysis of Language Skills
    - 2.6.3.2. Identification of Disorders and Comorbidities
- 2.7. Neuropsychological Rehabilitation in Children
  - 2.7.1. Early Interventions
    - 2.7.1.1. Language Therapy
    - 2.7.1.2. Early Stimulation Approaches
  - 2.7.2. Specific Therapeutic Approaches
    - 2.7.2.1. Therapies Based on Games
    - 2.7.2.2. Cognitive-Behavioral Therapy for Language
  - 2.7.3. Rehabilitation Techniques
    - 2.7.3.1. Brain Plasticity Therapies
    - 2.7.3.2. Language Rehabilitation Using Technology
- 2.8. Neurobiological Language Disorders in Adults
  - 2.8.1. Aphasia
    - 2.8.1.1. Broca's Aphasia
    - 2.8.1.2. Wernicke's Aphasia
    - 2.8.1.3. Global Aphasia
  - 2.8.2. Disorders Related to Acquired Brain Injury
    - 2.8.2.1. Dysarthria
    - 2.8.2.2. Speech Apraxias
  - 2.8.3. Neurodegenerative Disorders
    - 2.8.3.1. Alzheimer's Disease and Language
    - 2.8.3.2. Language Disorders in Amyotrophic Lateral Sclerosis (ALS)
    - 2.8.3.3. Language Disorders in Parkinson's Disease
- 2.9. Neuropsychological Assessment of Language in Adults
  - 2.9.1. Neuropsychological Tests in Adults
    - 2.9.1.1. Assessment of Aphasias
    - 2.9.1.2. Assessment of Cognitive and Linguistic Disorders
  - 2.9.2. Diagnostic Methods
    - 2.9.2.1. Clinical Interviews and Medical History
    - 2.9.2.2. Functional Assessment Scales
  - 2.9.3. Interpretation of Results in Adults
    - 2.9.3.1. Assessment of Verbal Disfluency
    - 2.9.3.2. Differentiation between Aphasia and Dementia
- 2.10. Neuropsychological Rehabilitation in Adults
  - 2.10.1. Rehabilitation after a Cerebrovascular Accident (CVA)
    - 2.10.1.1. Post-CVA Speech Therapy
    - 2.10.1.2. Approaches Based on Neuroplasticity
  - 2.10.2. Rehabilitation in Neurodegenerative Diseases
    - 2.10.2.1. Intervention Approaches in Alzheimer's Disease
    - 2.10.2.2. Language Rehabilitation in Amyotrophic Lateral Sclerosis (ALS)
  - 2.10.3. Emerging Therapies
    - 2.10.3.1. Cognitive-Behavioral Therapy in Aphasia
    - 2.10.3.2. Use of Technologie for Language Rehabilitation



### Module 3. Language Psychopathology

- 3.1. Introduction and Objectives
  - 3.1.1. Concept and Fundamentals of Psychopathology of Language
    - 3.1.1.1. Differentiation between Normal and Pathological Disorders
    - 3.1.1.2. Historical Evolution of the Concept
    - 3.1.1.3. Relationship between Language and Psychopathology
  - 3.1.2. Concept and Classification of Language Disorders
    - 3.1.2.1. Concept of Disorder, Impairment, Disturbance, and Delay
    - 3.1.2.2. Classification of Language Disorders
  - 3.1.3. Models in Psychopathology of Language
    - 3.1.3.1. Biomedical and Rehabilitation Model
    - 3.1.3.2. Biopsychosocial Model
  - 3.1.4. Differentiating between Linguistic and Psycholinguistic Disorders
    - 3.1.4.1. Primary vs. Secondary Language Disorders
    - 3.1.4.2. Relationship with Other Psychological Disorders
- 3.2. Neurodevelopmental and Communication Disorders
  - 3.2.1. Types of Communication Disorders
    - 3.2.1.1. Expressive and Receptive Language Disorders
    - 3.2.1.2. Verbal Fluency Disorders: Stuttering
    - 3.2.1.3. Social Communication Disorder (Pragmatic)
    - 3.2.1.4. Disorders of Voice and Articulation of Speech
  - 3.2.2. Disorders of Speech Sounds in Children
    - 3.2.2.1. Dyslalia
    - 3.2.2.2. Childhood Dysarthria
    - 3.2.2.3. Phonological Disorder
    - 3.2.2.4. Changes in Articulation and Normal Speech Development
  - 3.2.3. Simple Speech and Language Delay
    - 3.2.3.1. Definition and Characteristics of Simple Language Delay
    - 3.2.3.2. Assessment of Speech and Language Delay
    - 3.2.3.3. Progression and Prognosis of Simple Language Delay
    - 3.2.3.4. Risk and Protective Factors in Simple Delay
- 3.2.4. Explanatory Models
  - 3.2.4.1. Cognitive Model and Its Application to Communication Disorders
  - 3.2.4.2. Neurobiological Model of Speech and Language Disorders
  - 3.2.4.3. Psychosocial Model
  - 3.2.4.4. Interactive and Integrative Model
- 3.3. Neurodevelopment Disorders. Attention Deficit Hyperactivity Disorder
  - 3.3.1. Conceptual Approach and Brief Historical Overview
    - 3.3.1.1. Concept and Diagnostic Criteria for Attention Deficit Hyperactivity Disorder (ADHD)
    - 3.3.1.2. Distinction Between ADHD, Impulsivity, and Behavioral Disorders
    - 3.3.1.3. Etiology of ADHD: Genetic, Neurobiological, and Environmental Factors
    - 3.3.1.4. Evolution of the Concept Throughout History
    - 3.3.1.5. Early Diagnoses and the Transition to the Current Model
  - 3.3.2. Classification and Clinical Manifestations
    - 3.3.2.1. Classification of ADHD According to the DSM-5
    - 3.3.2.2. Clinical Manifestations of ADHD in Children and Adolescents
    - 3.3.2.3. Differential Diagnosis
  - 3.3.3. Hyperactivity and Other Disorders
    - 3.3.3.1. Hyperactivity Features in ADHD
    - 3.3.3.2. Disorders Linked to Hyperactivity
    - 3.3.3.3. Interventions and Treatments for Hyperactivity: Pharmacological and Behavioral
    - 3.3.3.4. Educational Intervention
  - 3.3.4. Impact of ADHD on Language Development
    - 3.3.4.1. Difficulties in Language Comprehension and Expression
    - 3.3.4.2. Disorders linked to Language Production
    - 3.3.4.3. Intervention in Language Development in Kids with ADHD
  - 3.3.5. Changes in Pragmatics and Verbal Fluency
    - 3.3.5.1. Pragmatic Difficulties in ADHD
    - 3.3.5.2. Verbal Fluency in ADHD
    - 3.3.5.3. Treatment of Pragmatic and Verbal Fluency Disorders

- 3.4. Autism Spectrum Disorders (ASD)
  - 3.4.1. General Conceptualization of ASD
  - 3.4.2. Importance of Studying ASD in Speech-Language Pathology
  - 3.4.3. Definition and Characteristics
    - 3.4.3.1. General Characteristics of ASD
    - 3.4.3.2. Early Signs and Progression
  - 3.4.4. Classification
    - 3.4.4.1. Diagnostic Criteria (DSM-5 and ICD-10)
    - 3.4.4.2. Types of ASD: Mild, Moderate, and Severe
  - 3.4.5. Psychopathology of Language in ASD
    - 3.4.5.1. Communication and Language Difficulties
    - 3.4.5.2. Pragmatic Language Disorders
    - 3.4.5.3. Prosody and Syntax Disorders
- 3.5. Specific Learning Disorders
  - 3.5.1. Concept and Classification of Neurodevelopmental Disorders
    - 3.5.1.1. Relationship between Specific Learning Disorders and Other Neurodevelopmental Disorders
  - 3.5.2. Definition and Characteristics
    - 3.5.2.1. Definition of Specific Learning Disorders
    - 3.5.2.2. Common Characteristics and Differences from Other Conditions
  - 3.5.3. Types of Specific Learning Disorders
    - 3.5.3.1. Dyslexia
    - 3.5.3.2. Dyscalculia
    - 3.5.3.3. Reading and Writing Learning Disorder
  - 3.5.4. Explanatory Models
    - 3.5.4.1. Neuropsychological Models
    - 3.5.4.2. Cognitive Models
    - 3.5.4.3. Environmental and Genetic Factors
- 3.6. Intellectual Disability, Sensory Impairments, Neurological Injuries, and Environmental Deprivation
  - 3.6.1. Concept and Characteristics of the Intellectual Disability
    - 3.6.1.1. Impact of Sensory Impairments and Neurological Injuries
    - 3.6.1.2. Definition and Characteristics of Intellectual Disability
  - 3.6.2. Diagnostic Criteria and Levels of Disability
    - 3.6.2.1. DSM-5 and ICD-10 Criteria for the Diagnosis of Intellectual Disability
    - 3.6.2.2. Levels of Disability and Their Implications for Treatment
  - 3.6.3. Explanatory Models of Intellectual Disability
    - 3.6.3.1. Genetic and Neurological Models
    - 3.6.3.2. Environmental and Cultural Approaches
  - 3.6.4. Assessment of Intellectual Disability
    - 3.6.4.1. Diagnostic Tools and Their Application
    - 3.6.4.2. Early Intervention Strategies
  - 3.6.5. Cerebral Palsy, Blindness, Deafness, and Social Isolation
    - 3.6.5.1. Repercussions of Cerebral Palsy on Motor and Cognitive Development
    - 3.6.5.2. Impact of Blindness and Deafness on Language Acquisition
  - 3.6.6. Effects of Sensory Impairments on Language Development
    - 3.6.6.1. Cerebral Palsy and its Relationship to Language
    - 3.6.6.2. Interventions to Improve Communication in Sensory Impairments
  - 3.6.7. Social Isolation and its Impact on Communicative Development
    - 3.6.7.1. Effects of Social Isolation on the Acquisition of Communication Skills
    - 3.6.7.2. Strategies to Promote Social and Communication Integration
- 3.7. Psychopathology in Personality Disorders and Psychotic Disorders
  - 3.7.1. Definition of Personality Disorders and Psychotic Disorders
    - 3.7.1.1. Relationship with Language and Communication
    - 3.7.1.2. Personality, Characteristics, and Classification of Personality Disorders
  - 3.7.2. Personality Disorders
    - 3.7.2.1. Borderline Personality Disorder
    - 3.7.2.2. Narcissistic and Antisocial Disorder
    - 3.7.2.3. Avoidant and Dependent Disorder
    - 3.7.2.4. Language Disorders in Personality Disorders
  - 3.7.3. Schizophrenia and Other Psychotic Disorders
    - 3.7.3.1. Characteristics of Schizophrenia
    - 3.7.3.2. Other Psychotic Disorders (Schizoaffective Disorder, Delusional Disorder)
    - 3.7.3.3. Language Disorders in Psychotic Disorders
    - 3.7.3.4. Hallucinations and Their Impact on Language

- 3.8. Psychopathology of Language in Other Clinical Conditions and Consequences for the Environment
  - 3.8.1. Relationship between Psychopathology and Language Disorders in Different Clinical Conditions
  - 3.8.2. Consequences for the Social and Family Environment
  - 3.8.3. Depression and Mania
  - 3.8.4. Characteristics of Affective Disorders
  - 3.8.5. Effects of Depression and Mania on Language
  - 3.8.6. Language Disorders in Affective Disorders
  - 3.8.7. Anxiety Disorders
    - 3.8.7.1. Types of Anxiety Disorders (Generalized, Phobic, Social)
    - 3.8.7.2. Impact of Anxiety on Language
    - 3.8.7.3. Language Disorders in Anxiety Disorders
  - 3.8.8. Dementia and Language Disorders
    - 3.8.8.1. Effects of Dementia on Language (Aphasia, Apraxia)
    - 3.8.8.2. Treatment and Management of Language Disorders Associated with Dementia
    - 3.8.8.3. Family, School, and Social Environment in Psychopathology of Language
- 3.9. Impact of Language Disorders on Child and Adolescent Mental Health
  - 3.9.1. Relationship between Language Disorders and Mental Health in Childhood and Adolescence
    - 3.9.1.1. Importance of Early Diagnosis and Intervention
    - 3.9.1.2. Language Disorders and Emotional Development
    - 3.9.1.3. Effects of Language Disorders on Self-Esteem and Self-Confidence
    - 3.9.1.4. Impact on Social Skills and School Integration
  - 3.9.2. Language Disorders and Anxiety Disorders
    - 3.9.2.1. Relationship between Communication Difficulties and Anxiety Disorders in Children and Adolescents
    - 3.9.2.2. Linguistic Manifestations Associated with Anxiety (Evasion, Incoherence, Among Others)
  - 3.9.3. Language Disorders and Depressive Disorders
    - 3.9.3.1. Effects of Language Disorders on the Development of Depression in Children and Adolescents
    - 3.9.3.2. Linguistic Characteristics of Depressive Disorders (Monotonous Speech, Reduced Vocabulary, etc.)







- 3.9.4. Language Disorders and Behavioral Disorders
  - 3.9.4.1. Relationship between Language Difficulties and Behavioral Disorders in Children and Adolescents
  - 3.9.4.2. Influence of Communicative Frustration on Disruptive Behaviors
- 3.10. The Role of Speech Therapists in the Rehabilitation of Patients with Schizophrenia and Language Disorders
  - 3.10.1. The Impact of Schizophrenia on Language and Communication
    - 3.10.1.1. The Importance of Language Rehabilitation in Schizophrenic Patients
    - 3.10.1.2. Linguistic Characteristics in Schizophrenia
    - 3.10.1.3. Impairments in Language Fluency, Coherence, and Structure
  - 3.10.2. The Role of the Speech Therapist in Diagnosis and Assessment
    - 3.10.2.1. Language Assessment Tools for Patients with Schizophrenia
    - 3.10.2.2. Identification of Associated Language Disorders (Aphasia, Dysarthria, etc.)
  - 3.10.3. Speech Therapy Intervention in Schizophrenia
    - 3.10.3.1. Therapies Aimed at Improving Verbal and Non-Verbal Communication
    - 3.10.3.2. Techniques for Restructuring Speech and Improving Fluency
    - 3.10.3.3. Interventions in Prosody, Syntax, and Semantic Disorders
    - 3.10.3.4. Treatment of Speech Disorders in Schizophrenia
    - 3.10.3.5. Strategies for Treating Dysarthria and Mutism
  - 3.10.4. Interdisciplinary Work in Schizophrenia Rehabilitation
    - 3.10.4.1. Collaboration between Speech Therapists, Psychiatrists, and Psychologists for a Comprehensive Approach
    - 3.10.4.2. Assessment of the Social and Family Environment and Its Impact on Language Rehabilitation
    - 3.10.4.3. Prognosis and Monitoring



04

# Teaching Objectives

The academic qualification will seek to provide physicians with in-depth knowledge of the anatomy and physiology of the nervous system, the neurobiological bases of language, and the areas of the brain involved in its functioning. It will also promote the development of practical skills in the use of advanced diagnostic tools, assessment techniques, and the design of personalized therapeutic interventions adapted to different contexts and patient profiles. In this way, professionals will be trained with a comprehensive and up-to-date vision to address the challenges presented by these disorders in modern medical practice.



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*The main objective of the program will be to enable you to understand, diagnose, and effectively treat language, communication, and speech disorders from a neuroscientific and clinical approach”*





## General Objectives

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- ♦ Understand the organization of the nervous system and its relationship to speech and language functions
- ♦ Identify developmental milestones and language disorders in children and adults
- ♦ Integrate the essential psychological and linguistic foundations of speech therapy, including language development, neuropsychology, and basic speech processes



*You will have access to up-to-date, high-quality content from anywhere, at any time, strengthening your ability to offer innovative, evidence-based treatments in clinical and social settings"*





## Specific Objectives

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### Module 1. Anatomy and Physiology of the Nervous System

- ♦ Identify the main anatomical structures of the central and peripheral nervous systems and their role in communication processes
- ♦ Analyze the neurobiological bases of language and speech
- ♦ Recognize the areas of the brain involved in speech production, comprehension, and motor control
- ♦ Describe the interactions between the motor and sensory structures involved in speech production

### Module 2. Neuropsychology of Language

- ♦ Relate clinical data and theoretical knowledge to inform decisions in interventions
- ♦ Use diagnostic tests and explain research techniques in neuropsychology of language
- ♦ Propose appropriate interventions based on linguistic profiles and interdisciplinary data

### Module 3. Language Psychopathology

- ♦ Get to know and identify communication, language, speech, voice and non-verbal oral function disorders
- ♦ Apply assessment techniques to diagnose language disorders and write speech therapy reports
- ♦ Intervene appropriately in different contexts (family, school, clinical) to treat language disorders
- ♦ Design, program and evaluate speech therapy interventions using appropriate techniques and resources



# 05 Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



“

*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*



## The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

“

*At TECH you will NOT have live classes  
(which you might not be able to attend)”*



### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“

*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”*



## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"*

### The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



### The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*





As such, the best educational materials, thoroughly prepared, will be available in this program:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### Interactive Summaries

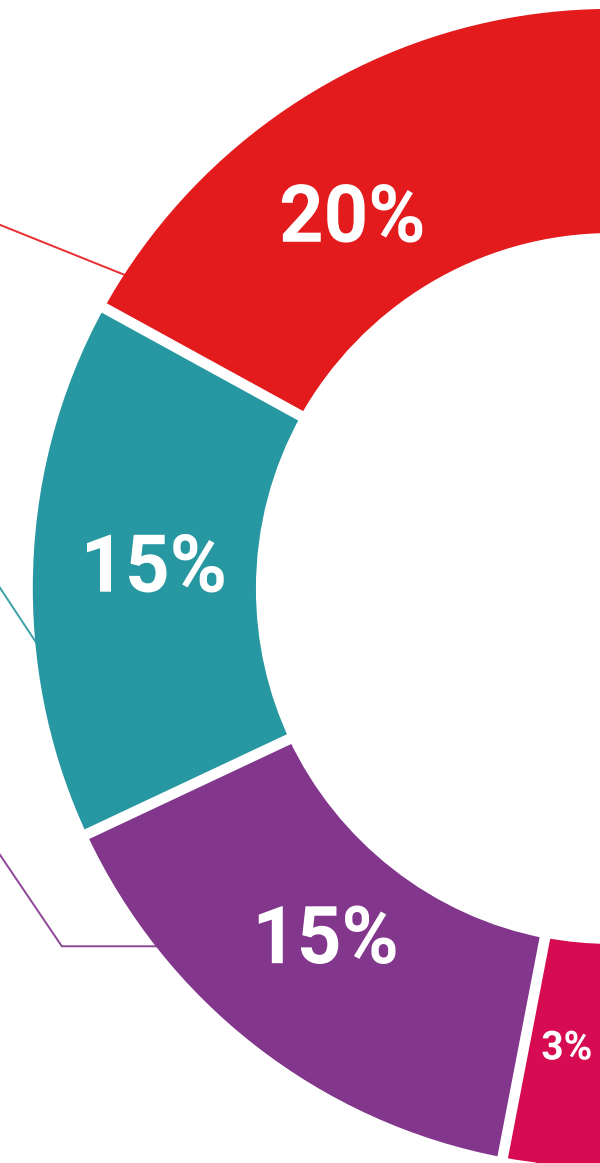
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

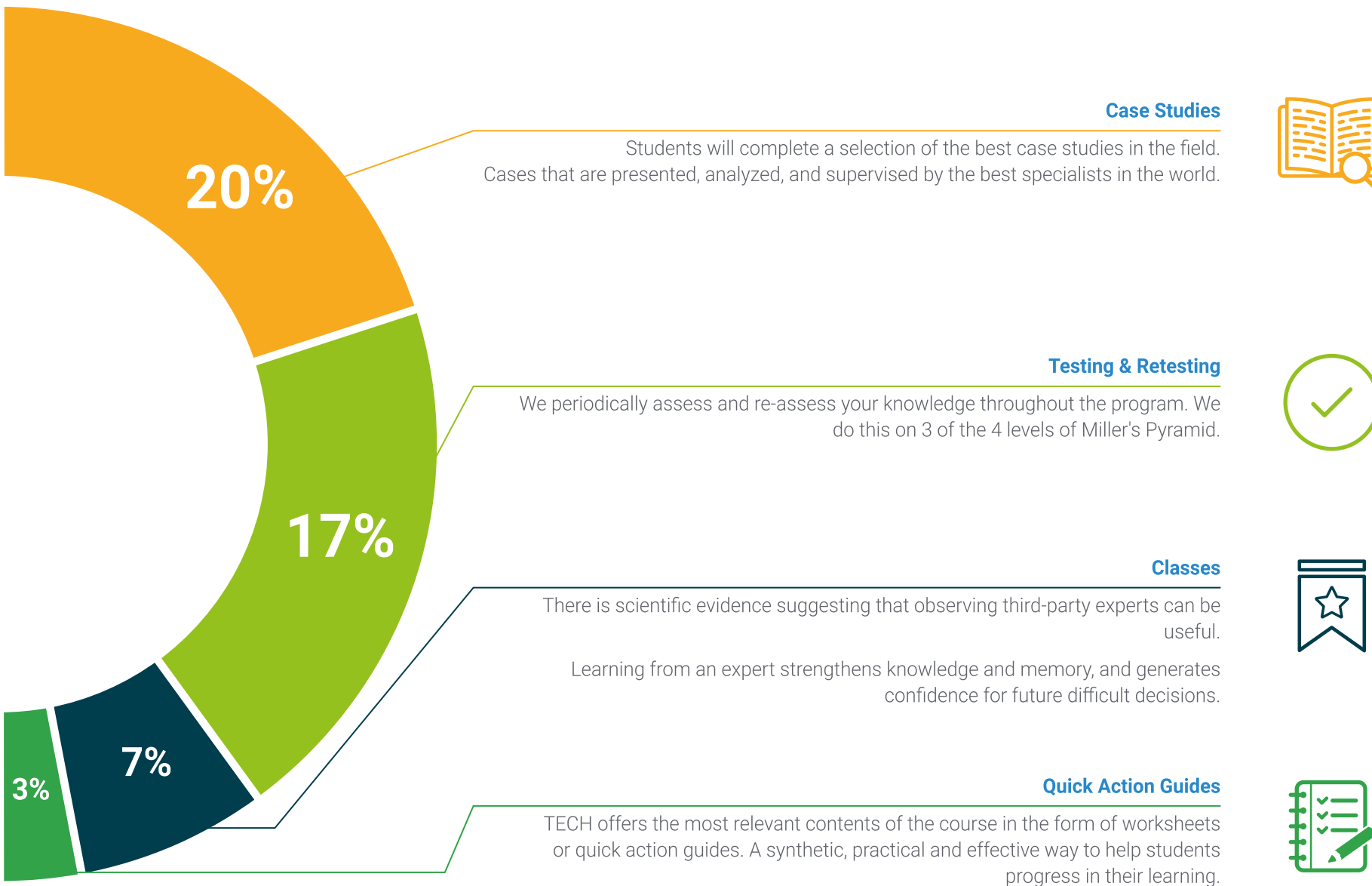
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





# 06 Certificate

This Postgraduate Diploma in Neuroscience and Psychopathology of Language guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Postgraduate Diploma issued by TECH Global University.





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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*



This private qualification will allow you to obtain a diploma for the **Postgraduate Diploma in Neuroscience and Psychopathology of Language** endorsed by TECH Global University, the world's largest online university.

**TECH Global University**, is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Neuroscience and Psychopathology of Language**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





**Postgraduate Diploma**  
Neuroscience and  
Psychopathology  
of Language

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Diploma

## Neuroscience and Psychopathology of Language

