

STUDENT GUIDE

Subject:

**Physiopathology and Therapeutic Approaches to Brain
Damage and Neurodegenerative Diseases, in Adults and
Children**

Coordinators:

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UAB Code: 44838

Modality: mandatory

9 ECTS

Presential classes:

1st semester of the 2026-2027 academic year

Dates: November 30th – December 4th
and December 14th– 18th, 2026

Schedule: From Monday to Thursday, from 9 a.m. to 5
p.m. and Friday, from 9 a.m. to 2:45 p.m

Objective

Study the Neurorehabilitation process of the different pathologies that compose the Acquired Brain Injury (DCA) and the most prevalent Neurodegenerative Diseases in adults and children, its evaluation, diagnosis and the most Advanced therapeutic strategies. It will be addresses from a holistic perspective, considering its great complexity and variability, without forgetting aspects such as neuropsychological and speech as the management of dysphagia.

Workload

9 ECTS: equivalent to 225 hours of student work, of which 67.5h are face-to-face, 11.25 supervised hours and 146.25 autonomous work.

Learning outcomes

Knowledge:

At the end of the subject, students will be able to:

- Identify the epidemiology and clinic of Acquired Brain Injury in adult and child patients.
- Deepen the field of clinical examination of patients with Cranioencephalic Injury, Stroke and Neurodegenerative diseases.
- Interpret the therapeutic relevance of the existing combination between functional treatment and that of higher functions (neuropsychology and speech therapy).

Abilities:

At the end of the subject, students will be able to:

- Select which neurorehabilitation technology is most appropriate for each type of adult or child-age patient with brain damage or degenerative disease and rehabilitation phase.
- Explain to patients with brain damage or degenerative diseases what are the fundamental recommendations for preventing complications of the affection itself.
- Reason the choice of each therapeutic technique for the treatment of medical complications in patients with brain damage or degenerative diseases in adults and children.
- Decide which analysis and diagnosis system is required at each moment of the therapeutic process of the patient with brain damage or degenerative diseases.

Competencias:

At the end of the subject, students will be able to:

- Classify the different instrumental evaluation tools suitable for each patient with brain damage and neurodegenerative diseases..

Teaching methodology

The methodological approach of the subject is based on considering the student as the protagonist of his teaching and learning process. The student must be active and autonomous throughout the process and the teaching staff will support them by providing the necessary information and resources to achieve the best learning results.

The subject is face-to-face with compulsory attendance at least 80% of the classes. Also part of the teaching-learning process is preparing assignments, personal study, reading recommended articles/reports of interest that will be discussed in class (problem solving) and sharing experiences from laboratory/clinical practices (discussions).), oral expository presentations with audiovisual support (inverted class) and workshops held during its development (cooperative learning).

Through the ***e-learning Guttman platform*** you will have access, among others, to the calendar and class schedules, to bibliographic support documentation, and you can also use it to do a collaborative work between the students and, between the students and teachers to clarify doubts, to share interesting findings, news, articles, books, conferences, etc.

The students will also have hours of autonomous work to integrate what happens in class in person, also having the possibility of being supervised during workshops, exhibitions or via direct consultation with the teaching staff outside of direct teaching hours.

Regarding the supervised activities, during the tutorials, a more individualized attention will be provided to the students to delve into aspects of personal interest.

The information in this document provides a brief summary of the main features of the program and expected learning outcomes.

Contents description:

- Epidemiology, diagnosis and neurorehabilitation treatment of the cranioencephalic traumatism (TCE).
- Epidemiology, diagnosis and neurological and rehabilitation treatment of the cranioencephalic traumatism (TCE).
- Introduction to the neurodegenerative disease diagnosis, evaluation and treatment.
- Neuropsychological Rehabilitation.
- Diagnosis and treatment of the neurogenesis dysphagia.
- Speech therapy rehabilitation.

Learning outcomes evaluation

The evaluation activities will be carried out at the end of the subject. These are activities that you must work individually and consists of:

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1. **Resolution of practical cases:** 2 cases will be proposed with questions to develop, one at the end of the first block of the subject and the other at the end of the subject.
 - a. ICTUS and/or DCA clinical case **(30% of the final grade of the subject)**:
 - b. Neurodegenerative and/or infantile clinical case **(30% of the final grade of the subject)**:

The possibility of incorporating a flipped classroom session will be considered.

During the writing process, generative artificial intelligence technology may be used exclusively to improve the readability and language of the manuscript, as well as to generate illustrative figures of the procedures. It must be stated if this option has been used.

2. **Theoretical tests:** It Will consists of a multiple-choice questionnaire about all the subjects taught, one for each week of class **(30% of the final grade of the subject)**
3. **The attendance and participation** in class has a weight of **10% in the final mark of the subject**.

If you do not present evidence of learning or you have not attended the minimum number of hours of the programmed activities of the subject (80%), the subject will be "not evaluable". The qualification of not evaluable in the final evaluation report implies exhausting the inherent right in the subject's enrollment.

You will pass the subject if you obtain a minimum score of 5 points (scale 0-10) as the average mark of the two evidence of learning.

The final grade Will be calculated with the weight corresponding to theoretical tests (15% each test), preparation of three papers (20% each one) and attendance (10%)

Procedure and recovery criteria

The re-evaluation is a process that will be put into operation once the period of publication of the final grades has ended.

- You will be entitled to a re-evaluation if you have obtained between 3.5 and 4.9 in the average grade of the subject.
- The test submitted to the re-evaluation process may not exceed 5.0 points (approved) in the final grade.

The subject's web

In the web of each subject you Will find information of interest for the follow-up of the study:

- Forum of the subject. Through this space you can keep in touch with the teachers or among the other students, to provide suggestions, answer questions, etc.
- News. It is the space from where you Will receive news and announcements about the evolution of the subject.
- Programs. The subject can be downloaded in PDF format, indicating the subjects, schedules and the teaching staff.
- Documentation. Here you Will find information and bibliography of interest that you can consult for the later study of the topics.
- Evaluation of competences. In this space you Will find all the necessary information and the delivery dates of the evaluation that will be done for this subject

Satisfaction surveys

It is very important that students send us your comments, complaints, and suggestions regarding the subject.

There are two **anonymous** assessment questionnaires. They are short questionnaires, easy to fill out and very important for the coordination of the master's degree, since the opinion of the students will be of great help for the improvement of this subject in future editions.

- Assessment of the teaching staff. Through mobile phone or e-mail, students will receive satisfaction questionnaires for the teaching action of teachers who have participated in the subject.
<https://forms.gle/GLhnS7PdMJjaNi988>
- Evaluation of the subject. At the end of the subject, the general evaluation questionnaire of its contents can be answered.
<https://forms.gle/csQ7vsDqh3LetP8D7>

Coordination

For any aspect of the Organization and the subject temary you can contact

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RECOMMENDED BIBLIOGRAPHY

- **Brain Injury Medicine. Principles and Practice.** 3ª Ed. 2021 Nathan D. Zasler. ISBN: 9780826143044
- **Stroke Rehabilitation,** 1st Ed. 2019 R Wilson & P Raghavan ISBN: 9780323662086
- **Physical Medicine and Rehabilitation: Principles and Practice.** Ed 2019. Delisa's Lippincott Raven; ISBN: 9781496374967
- **Dysphagia: Clinical Management in Adults and Children** 3ª Ed. 2020 by Michael E. Groher ISBN: 9780323636483
- **Diagnòstic i tractament de les malalties vasculars cerebrals**
https://scneurologia.cat/wp-content/uploads/2019/03/Guia-Vascular-Societat-Catalana-de-Neurologia_2018.pdf
- **Diagnòstic i tractament de la malaltia de Parkinson**
https://scneurologia.cat/wp-content/uploads/2019/02/Guia-Mèdica-de-Parkinson-de-la-Societat-Catalana-de-Neurologia_Actualització_2016-segona-edició_def.pdf
- **Diagnòstic i tractament de l'Esclerosi Múltiple**
<https://www.scneurologia.cat/wp-content/uploads/2021/03/Guia-Esclerosi-Multiple-Societat-Catalana-de-Neurologia-Societat-Catalana-de-Neurologia-2021.pdf>
- **Principios básicos de la Neurorrehabilitación del Paciente con Daño Cerebral Adquirido. Recomendaciones de la Sociedad Española de Neurorrehabilitación**
https://www.neuro-reha.com/pdf/guia_senr_2.pdf
- **Neurorrehabilitación en Pacientes en Estados Alterados de la Consciencia. Recomendaciones de la Sociedad Española de Neurorrehabilitación.**
https://www.neuro-reha.com/pdf/guia_senr_5.pdf