FEDERAL UNIVERSITY OF SÃO CARLOS FOUNDATION

GRADUATE PROGRAM IN PHYSIOTHERAPY – PPGFt/CCBS/R

COURSE CHARACTERIZATION FORM

Graduate Program: Physiotherapy

Course Code: FIT-213

Credits: 4

Course Title: Neurofunctional Physiotherapy

Start of Validity: 2025 – 2nd Semester

Justification

The restructuring of the course Neurofunctional Physiotherapy is motivated by the need to align it with CAPES guidelines for the 2025–2028 evaluation period, which emphasize applied, instrumental courses focused on the critical and technical training of graduate students. The new proposal reduces the workload from 12 to 4 credits, promoting a concentrated, integrated approach aligned with the current graduate profile, allowing the course to serve as a foundational basis for clinical and scientific practice in neurofunctional physiotherapy.

Course contents were reorganized to ensure thematic coherence, interdisciplinarity, and practical depth, with emphasis on the application of the International Classification of Functioning, Disability and Health (ICF), neuroplasticity, motor learning and control, neurodevelopment, and evidence-based pediatric intervention. The teaching staff was reorganized according to each faculty member's area of expertise, optimizing the quality of training provided.

Course Workload

Theoretical Classes: 30 hours

Practical Classes: Not applicable

Exercises/Seminars: 30 hours

Course Syllabus

In-depth discussion of theoretical and applied foundations of neurofunctional physiotherapy, with emphasis on the integration between assessment and intervention across different life cycles and health conditions. Study of the principles of neuroplasticity and motor learning as the basis for rehabilitation, typical and atypical sensorimotor development, motor control, and task-oriented approaches. Critical application of the International Classification of Functioning, Disability and Health (ICF) to support clinical reasoning and the selection of assessment tools and intervention strategies. Analysis of evidence-based interventions, with focus on pediatric and adult populations, and the use of technological and clinical resources to promote functioning and participation.

Nature of the Course

Specific to the Area of Concentration in Physiotherapy and Functional Performance.

Main Bibliography

Dan B, Rosenbaum P, Carr L, Gough M, Coughlan J, Nweke N. Proposed updated description of cerebral palsy. Developmental Medicine & Child Neurology, 2025.

Abreu RWF, Lima CRG, Santos AN, Rocha NACF. Remote screening protocol for functioning and contextual factors (e-Followkids) in Brazilian children with biological risk in the first 2 years. Infant Behavior & Development, 2025.

Jackman M et al. Interventions to improve physical function for children and young people with cerebral palsy: international clinical practice guideline. Developmental Medicine & Child Neurology, 2022.

Novak I et al. State of the Evidence Traffic Lights 2019: Systematic review of interventions for preventing and treating children with cerebral palsy. Current Neurology and Neuroscience Reports, 2020.

Jones TA. Motor compensation and its effects on neural reorganization after stroke. Nature Reviews Neuroscience, 2017.

Schiariti V et al. Toolbox of multiple-item measures aligning with the ICF Core Sets for children and youth with cerebral palsy. European Journal of Paediatric Neurology, 2017.

Roy RR, Harkema SJ, Edgerton VR. Activity-based interventions for improved recovery of motor function after spinal cord injury. Archives of Physical Medicine and Rehabilitation, 2012.

Pascual-Leone A et al. The plastic human brain cortex. Annual Review of Neuroscience, 2005.

Newell KM, Vaillancourt DE. Dimensional change in motor learning. Human Movement Science, 2001.

Gibson EJ, Pick AD. An ecological approach to perceptual learning and development. Oxford University Press, 2000.

Main Responsible Faculty

Ana Carolina de Campos – Permanent Faculty

Eloisa Tudella – Permanent Faculty

Natalia Duarte Pereira – Permanent Faculty

Nelci Adriana Cicuto Ferreira Rocha – Permanent Faculty

Thiago Luiz de Russo – Permanent Faculty

Approval

Approved at the 294th Ordinary Meeting of the PPGFT Graduate Program Committee on June 13, 2025.

São Carlos, June 17, 2025.

Prof. Dr. Anielle Cristhine de Medeiros Takahashi

Chair of the PPGFT Graduate Program Committee and Coordinator of the PPGFT – UFSCar