



**FEDERAL UNIVERSITY OF SÃO CARLOS**  
**CENTER OF BIOLOGICAL AND HEALTH SCIENCES**  
**GRADUATE PROGRAM IN PHYSICAL THERAPY**  
**Concentration: Physical Therapy and Functional Performance**  
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**COURSE: FIT 579 - Advanced Topics in Neurofunctional Physical Therapy  
in Childhood and Adolescence – Evidence-Based Biopsychosocial Approach**

**Credits: 6**

**Course Load: 90 hrs.**

**Instructors: Nelci Adriana Cicuto Ferreira Rocha, Ph.D.**

**Ana Carolina de Campos, Ph.D.**

**Course Overview:**

Theoretical aspects for evaluating function using a biopsychosocial model. Advanced methods in neurofunctional physical therapy for evaluating children and adolescents: biomechanical evaluation; neural control of movement; and standardized instruments for evaluating activities, participation, and contextual factors. Advanced concepts and methods of intervention in neurofunctional physical therapy for children and adolescents and their scientific evidence.

**Course Materials:**

1. Adair, B., Ullenhag, A., Keen, D., Granlund, M., & Imms, C. (2015). The effect of interventions aimed at improving participation outcomes for children with disabilities: a systematic review. *Developmental Medicine & Child Neurology*, 57(12), 1093-1104.
2. Corsi, C., Santos, M. M., Moreira, R. F., Dos Santos, A. N., de Campos, A. C., Galli, M., & Rocha, N. A. (2021). Effect of physical therapy interventions on spatiotemporal gait parameters in children with cerebral palsy: a systematic review. *Disability and rehabilitation*, 43(11), 1507-1516.
3. De Campos, A. C., Sukal-Moulton, T., Huppert, T., Alter, K., & Damiano, D. L. (2020). Brain activation patterns underlying upper limb bilateral motor coordination in unilateral cerebral palsy: an fNIRS study. *Developmental Medicine & Child Neurology*, 62(5), 625-632.
4. Jackman, M., Lannin, N., Galea, C., Sakzewski, L., Miller, L., & Novak, I. (2020). What is the threshold dose of upper limb training for children with cerebral palsy to improve function? A systematic review. *Australian occupational therapy journal*, 67(3), 269-280
5. Longo, E., de Campos, A. C., & Palisano, R. J. (2019). Let's make pediatric physical therapy a true evidence-based field! Can we count on you? *Brazilian journal of physical therapy*, 23(3), 187.
6. Nguyen, L., Cross, A., Rosenbaum, P., & Gorter, J. W. (2019). Use of the International Classification of Functioning, Disability and Health to support goal-setting practices in pediatric rehabilitation: a rapid review of the literature. *Disability and rehabilitation*, 1-11.

7. Novak, I., Morgan, C., Adde, L., Blackman, J., Boyd, R. N., Brunstrom-Hernandez, J., ... & Badawi, N. (2017). Early, accurate diagnosis and early intervention in cerebral palsy: advances in diagnosis and treatment. *JAMA pediatrics*, 171(9), 897-907.
8. Novak, I., Morgan, C., Fahey, M., Finch-Edmondson, M., Galea, C., Hines, A., ... & Badawi, N. (2020). State of the evidence traffic lights 2019: systematic review of interventions for preventing and treating children with cerebral palsy. *Current neurology and neuroscience reports*, 20(2), 1-21.
9. Pavão, S. L., Lima, C. R. G., & Rocha, N. A. C. F. (2021). Effects of motor and cognitive manipulation on the dual-task costs of center of pressure displacement in children, adolescents and young adults: A cross-sectional study. *Clinical Biomechanics*, 84, 105344.
10. Rocha, N. A. C. F., de Campos, A. C., Rocha, F. C. F., & dos Santos Silva, F. P. (2017). Microcephaly and Zika virus: neuroradiological aspects, clinical findings and a proposed framework for early evaluation of child development. *Infant Behavior and Development*, 49, 70-82.
11. Schiariti, V., Tatla, S., Sauve, K., & O'Donnell, M. (2017). Toolbox of multiple-item measures aligning with the ICF Core Sets for children and youth with cerebral palsy. *European Journal of Paediatric Neurology*, 21(2), 252-263