



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 155 - Pain: Physical Therapy Evaluation and Treatment

Credits: 8

Course Load: 90 hrs.

Instructors: Luiz Fernando Approbato Selistre, Ph.D.

Mariana Arias Avila Vera, Ph.D.

Richard Eloin Liebano, Ph.D.

Course Overview:

1. Multidimensional nature of pain:
 - a. Theories of pain; terminology, description, and associated health conditions
 - b. Effects of culture, society, institutions, and regulatory agencies on pain evaluation and management
2. Pain evaluation and measurement
 - a. Use of valid and reliable instruments to measure pain and associated symptoms
 - b. Evaluating patients in their context, preferences, and values
3. Pain management
 - a. Pain education; self-management and health promotion: scientific evidence
 - b. Treatment plan
 - c. Physical therapy interventions: scientific evidence and guidelines for pain management
4. Painful health conditions
 - a. Pain evaluation and measurement in special populations
 - b. Physical therapy management of painful conditions

Course Materials:

1. Alqualo-Costa R. A. et al. (2021) 'Interferential current and photobiomodulation in knee osteoarthritis: A randomized, placebo-controlled, double-blind clinical trial', Clin Rehabil. Apr 26;2692155211012004. doi: 10.1177/02692155211012004.
2. Avila, M. A. et al. (2017) 'Effects of a 16-week hydrotherapy program on three-dimensional scapular motion and pain of women with fibromyalgia: A single-arm study', Clinical Biomechanics, 49(February), pp. 145–154. doi: 10.1016/j.clinbiomech.2017.09.012.

3. Camargo, P. R. et al. (2015) 'Effects of Stretching and Strengthening Exercises, With and Without Manual Therapy, on Scapular Kinematics, Function, and Pain in Individuals With Shoulder Impingement: A Randomized Controlled Trial', *Journal of Orthopaedic & Sports Physical Therapy*, 45(12), pp. 984–997. doi: 10.2519/jospt.2015.5939.
4. Nuernberg Back, C. G., Liebano, R. E. and Avila, M. A. (2021) 'Perspectives of implementing the biopsychosocial model to treat chronic musculoskeletal pain in primary health care', *Pain Management*, 11(2), pp. 217–225. doi: 10.2217/pmt-2020-0024.
5. Raja, S. N. et al. (2020) 'The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises', *Pain*, 161(9), pp. 1976–1982. doi: 10.1097/j.pain.0000000000001939.
6. Rampazo É. P. et al (2021) 'Sensory, Motor, and Psychosocial Characteristics of Individuals With Chronic Neck Pain: A Case-Control Study', *Phys Ther*, Mar 26;pzab104. doi: 10.1093/ptj/pzab104. Online ahead of print.
7. Selistre LFA et al. (2021) 'The relationship between urinary C-Telopeptide fragments of type II collagen, knee joint load, pain, and physical function in individuals with medial knee osteoarthritis', *Braz J Phys Ther*, 25(1):62-69. doi: 10.1016/j.bjpt.2020.02.002.
8. Selistre LFA et al. (2017) 'The relationship between external knee moments and muscle co- activation in subjects with medial knee osteoarthritis', *J Electromyogr Kinesiol*, 33:64-72. doi: 10.1016/j.jelekin.2017.01.007.
9. Selistre LFA et al. (2020) 'Reliability and Validity of Clinical Tests for Measuring Strength or Endurance of Cervical Muscles: A Systematic Review and Meta-analysis', *Arch Phys Med Rehabil*, 28;S0003-9993(20)31343-5. doi: 10.1016/j.apmr.2020.11.018.
10. Telles J. D. et al. (2021) 'Hypoalgesic Effects of Transcutaneous Electrical Nerve Stimulation Combined With Joint Manipulation: A Randomized Clinical Trial', *J Manipulative Physiol Ther* Apr 17;S0161-4754(20)30197-4. doi: 10.1016/j.jmpt.2020.09.004.
11. Trevisan, D. C. et al. (2017) 'Static postural sway of women with and without fibromyalgia syndrome: A cross-sectional study', *Clinical Biomechanics*, 44, pp. 83–89. doi: 10.1016/j.clinbiomech.2017.03.011.
12. Zamunér, A. R. et al. (2019) 'Impact of water therapy on pain management in patients with fibromyalgia: current perspectives', *Journal of Pain Research*, Volume 12, pp. 1971–2007. doi: 10.2147/JPR.S161494.3.Barbieri DF, Srinivasan D, Mathiassen SE, Oliveira AB. Variation in upper extremity, neck and trunk postures when performing computer work at a sit-stand station. *Appl Ergon* 2019;75:120-128.
13. Cabral AM, Moreira RFC, de Barros FC, Sato TO. Is physical capacity associated with the occurrence of musculoskeletal symptoms among office workers? A cross-sectional study. *Int Arch Occup Environ Health* 2019;92(8):1159-1172.
14. Cid MM, Côté JN, Zancanaro LL, Oliveira AB. Sex differences in postures of the upper body during a simulated work task performed above shoulder level. *J Biomech* 2020;107:109855.

15. Ferreira ALR, Sato TO. Effectiveness of ergonomic training to reduce physical demands and musculoskeletal symptoms - an overview of systematic reviews. *Int J Ind Ergon* 2019;74:102845.
16. Mathiassen SE, Wahlström J, Forsman M. Bias and imprecision in posture percentile variables estimated from short exposure samples. *BMC Medical Research Methodology* 2012, 12:36.
17. Mathiassen SE. Diversity and variation in biomechanical exposure: What is it, and why would we like to know? *Appl Ergon* 2006;37:419-427.
18. van der Beek AJ, Dennerlein JT, Huysmans MA, Mathiassen SE, Burdorf A, van Mechelen W, van Dieën JH, Frings-Dresen MHW, Holtermann A, Janwantanakul P, van der Molen HF, Rempel D, Straker L, Walker-Bone K, Coenen P. A research framework for the development and implementation of interventions preventing work-related musculoskeletal disorders. *Scand J Work Environ Health* 2017;43(6):526-539.
19. Vieira LMSMA, Sato TO. Prevalence of multisite pain and association with work ability - cross-sectional study. *Musculoskelet Sci Pract* 2020;50:102279.