



**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 541 - Topics in Shoulder Complex Evaluation and Intervention

Credits: 6

Course Load: 90 hrs.

Instructor: Paula Rezende Camargo, Ph.D.

Course Overview:

- 1) General aspects of the biomechanics of the shoulder complex in healthy individuals.
- 2) Most common biomechanical disorders in the shoulder complex.
- 3) Evidence-based physical therapy for effectively treating individuals with shoulder disorders.
- 4) Discussion of different methods for analyzing 3-D kinematics and muscle activation of the shoulder complex, identifying their advantages and disadvantages.

Course Materials:

1. Inman VT, Saunders JB, Abbott LC. Observations on the function of the shoulder joint. *J Bone Joint Surg.* 1944;26A:1-30.
2. Karduna AR, McClure PW, Michener LA, Sennett B. Dynamic measurements of three-dimensional scapular kinematics: a validation study. *J Biomech Eng.* 2001;123:184-90.
3. Kuhn JE. Exercise in the treatment of rotator cuff impingement: A systematic review and a synthesized evidence-based rehabilitation protocol. *J Shoulder Elbow Surg.* 2009;18:138-60
4. Levangie PK, Norkin CC. *Joint Structure and Function – A Comprehensive Analysis.* Philadelphia: F.A. Davis Company, 4th edition, 2005.
5. Ludewig PM, Reynolds JF. The association of scapular kinematics and glenohumeral joint pathologies. *J Orthop Sports Phys Ther.* 2009;39(2):90-104.
6. Ludewig PM, Phadke V, Braman JP, Hassett DR, Cieminski CJ, LaPrade R. Motion of the shoulder complex during multi-planar humeral elevation. *J Bone Joint Surg.* 2009;91:378-389.

McClure PW, Bialker J, Neff N, Williams G, Karduna A. Shoulder function and 3-dimensional kinematics in people with shoulder impingement syndrome before and after a 6-week exercise program. *Phys Ther*. 2004;84(9):832-48.

McClure PW, Michener LA, Karduna AR. Shoulder function and 3-dimensional scapular kinematics in people with and without shoulder impingement syndrome. *Phys Ther*. 2006;86(6):1075-90.

Phadke V, Camargo PR, Ludewig PM. Scapular and rotator cuff muscle function during arm elevation: a review of normal function and alterations with shoulder impingement. *Rev Bras Fisioter*. 2009;13:1-9.

Teece RM, Lunden JB, Lloyd AS, Kaiser AP, Cieminski CJ, Ludewig PM. Three-dimensional acromioclavicular joint motions during elevation of the arm. *J Orthop Sports Phys Ther*. 2008;38(4):181-190.

*Artigos recentes de interesse da área e trabalhos em andamento da linha de pesquisa