



**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-529 - Topics in Functional Movement Analysis:**

**Emphasis in Biomechanics Occupational**

**Credits: 6**

**Course Load: 90hrs.**

**Instructor: Ana Beatriz de Oliveira, Ph.D.**

**Course Overview:**

1. General aspects of biomechanics and occupational biomechanics.
2. Instrumentation applied in the study of functional movement.
3. Methodological aspects of quantitative recording in functional environments.
4. Processing and analysis tools of time series linked to the registration of the functional movement.
5. Assessment of exposure in the real work environment: methodological considerations and implications for the prevention of musculoskeletal diseases.

**Course Materials:**

1. HÄGG GM, LUTTMANN A, JAGER M. Methodologies for evaluating electromyographic field data in ergonomics. 2000. Journal of Electromyography and Kinesiology. 10(5):301-12.
2. MATHIASSEN SE, WINKEL J. Quantifying variation in physical load using exposure vs time data. 1991. Ergonomics 34: 1455-1468.
3. Mathiassen, S. E. Diversity and variation in biomechanical exposure: What is it, and why would we like to know? Applied Ergonomics. 2006. 37:419-427.
4. DE LUCA C. The Use of Surface Electromyography in Biomechanics. Journal of Applied Biomechanics. 1997. 13(2):135-163.
5. MERLETTI, R., PARKER, P. Electromyography - Physiology, Engineering, and Noninvasive Applications. 2004. New Jersey: John Wiley & Sons, Inc.
6. KUMAR S, MITAL A. Electromyography In Ergonomics. 1996. CRC.
7. Soderberg GL, Cook TM. Electromyography in biomechanics. 1984. Physical Therapy. 64(12):1813-20.