

## **SURFACE ELECTROMYOGRAPHY APPLIED TO PHYSICAL EVALUATION AND EXERCISE (2024084)**

### **COURSE SYLLABUS:**

Leveling concepts about the fundamentals of neurophysiology of muscle contraction, roles of voltage-dependent proteins, neurotransmitters and cellular organelles, aiming at establishing relationships with physical exercise. Description of the different types of electromyography, with discussions about the potential and limitations for the diagnosis and prospective monitoring of neuromuscular capacities under the influence of immobility and physical exercise (biofeedback). Description of the parameters obtained by surface electromyography in the amplitude, time and frequency domains. Establishment of relationships between the results obtained in collections and those substantiated by articles in the area.

### **GOALS:**

Discuss basic concepts associated with electromyography for the acquisition of data for the evaluation of muscle excitation. Critically evaluate the results obtained by articles in the area of Physical Education. Train the graduate student to analyze data related to research with Electromyography related to the area of Physical Education and associated with the prescription of exercises for treatment, prevention, and physical performance, with the correct interpretation of the observed outcomes.

### **BIBLIOGRAPHY:**

#### **Books:**

LATASH ML. Base Neurofisiológica do Movimento. 2a ed. Editora Phorte, 2015. ISBN-10: 8576555476; ISBN-13: 978-8576555476

KAMEN G, GABRIEL DA. Fundamentos da Eletromiografia. 1ª ed. Editora Phorte, 2015. ISBN-10: 8576555530; ISBN-13: 978-8576555537

MICHELL AW. Descomplicando a EMG. 1ª ed. Editora Di Livros, 2016. ISBN-10: 8580531047; ISBN-13: 978-8580531046

#### **Articles:**

DE LUCA CJ. The use of surface electromyography in biomechanics. J App Biomechanics 1997;13(2):135-163. Disponível em: <http://delsys.com/decomp/078.pdf>

HUG F. Can muscle coordination be precisely studied by surface electromyography? J Electromyogr Kinesiol. 2011;21(1):1-12. doi: 10.1016/j.jelekin.2010.08.009.

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