

<b>ID</b>	3805
<b>Curricular Unit</b>	Methodology of Scientific Research in Ergonomics
<b>Regent</b>	Duarte Fernando da Rosa Belo Patronilho de Araújo
<b>Learning Outcomes</b>	<p>Introduce the student to scientific thought. The evolution of scientific thought in Human Kinetics. Develop the theoretical skills necessary for the practice of scientific research, through the systematic study of fundamental processes and specific strategies for planning, conducting, analyzing, interpreting and presenting the results. Mastering fundamental concepts of scientific research: problem, hypothesis, research design, method. To know different types of study and the context of its application. Mastering methodological alternatives for the same problem. Mastering APA style for writing manuscript and bibliographic referencing. In general, the possible theoretical and methodological discussion of specific issues and problems in the field of Human Kinetics.</p>
<b>Syllabus</b>	<ol style="list-style-type: none"> <li>1. Research in the science of human movement</li> <li>2. What is science and scientific research?</li> <li>3. Ethical aspects of scientific research</li> <li>4. Choose a topic/problem to investigate, issues and research objectives and strategies to address these issues (focus on the problem, identify variables, operationally define variables, specify the problem, hypotheses)</li> <li>5. Using theories (models and hypotheses), literature</li> <li>6. Choosing a methodology (types of research methods, planning, design and procedures)</li> <li>7. Nature of research: Variables and their measurement, validity, sensitivity and fidelity</li> <li>8. Representation of research: Sampling and circumstances (context and task to investigate)</li> <li>9. Collecting data (data types, data selection, collection types)</li> <li>10. Describe, present and explore the data (significance of data)</li> <li>11. Interpret and discuss the data</li> <li>12. Writing a research project</li> <li>13. Publishing articles in scientific journals</li> </ol>

Continuous Assessment implies the presence of 2/3 of the classes taught. Continuous assessment will have two parts: 1) presentation and discussion of an article of scientific research, chosen by the student and approved by the teacher and 2) submission of a project of scientific research prepared by the student. Both the selection and presentation of scientific articles, and the preparation and presentation of scientific research project, are accompanied in class as follows:

### **Evaluation**

- Each student presents their work and puts in question to the class
- The presentation has a maximum length of 10'
- The student raises issues or questions to the class

The final grade is assigned as follows: selection and presentation of scientific articles (30%) + project presentation (30%) + written report of the project (40%). The project should have a maximum of 10 pages including introduction, method and references.

### **Bibliography**

- Almeida, L., & Freire, T. (2008). Metodologia da Investigação em Psicologia e Educação (5th Ed). Braga: Psiquilíbrios.
- Carmo, H., & Ferreira, M. (2008). Metodologia da investigação: Guia para auto-aprendizagem (2nd Ed). Lisboa: Universidade Aberta.
- Thomas, J., Nelson, J. & Silverman, D. (2005). Research methods in physical activity (5th Ed). Champaign, Il: Human Kinetics.