

<b>ID</b>	3404
<b>Curricular Unit</b>	Industrial Ergonomics
<b>Regent</b>	Maria Filomena Araújo da Costa Cruz Carnide
<b>Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Mastery of concepts and conditions of own biomechanics and organizational exposure industrial context.</li> <li>2. Capacity to delineate an ergonomic analysis of specific working conditions conducive to the development of amendments to the health industry context.</li> <li>3. Mastery methodologies for integrated analysis of occupational exposure to biomechanical and organizational nature.</li> <li>4. The Domain selection and application of exposure assessment tools.</li> <li>5. Capacity for collecting, monitoring and analyzing data.</li> </ol>
<b>Syllabus</b>	<ol style="list-style-type: none"> <li>1 - Principles of Industrial Ergonomics</li> <li>2 - Characterization of the physical conditions of conducting the activity in industrial context</li> <li>3. Methodological approaches for assessing exposure               <ol style="list-style-type: none"> <li>3.1. Levels of exposure-response analysis: defining priorities</li> <li>3.2. Delimitation of study type</li> <li>3.3. Delimitation of the study population</li> <li>3.4. Definition of variables relevant study</li> <li>3.5. Definition of strategies of data collection</li> </ol> </li> <li>4. Methods of exposure assessment (objectives, principles of application / how and when to apply, interpreting information and limitations)               <ol style="list-style-type: none"> <li>Subjective 4.1-Trial</li> <li>4.2-systematic observations (in situ and retrospectives)</li> <li>4.3 direct-methods (in situ and laboratory)                   <ol style="list-style-type: none"> <li>4.3.1 Assessment of the mechanical load by using direct methods of assessing the intensity, duration and frequency of muscle activation</li> <li>4.3.2 Integration of quantitative biomechanical parameters in numerical and qualitative explanatory models.</li> </ol> </li> </ol> </li> <li>4 - Standards, recommendations and current programs on expos</li> </ol>
<b>Evaluation</b>	<p>Continuous assessment :</p> <p>Theoretical-component - perform a writing frequency. The frequency must have a minimum grade of 9.5.</p> <p>-Practical component - making worksheets 2 of which must be evaluated. All entries must have a minimum grade of 9.5. The note of this component is 30% of the final mark.</p> <p>Final evaluation :</p> <ul style="list-style-type: none"> <li>• Conducting an examination consisting of a written, practical and oral test. The final grade is 70% of theoretical and practical component of 30%.</li> </ul>

## **Bibliography**

Bernard, B. (1997). Musculoskeletal disorders and workplace factors. A critical review of epidemiologic evidence for work-related musculoskeletal disorders of the neck, upper extremity, and low back pain. National Institute for Occupational Safety & Health, Publ No. 97,141 .

. Colombini, D., Occhipinti, E., & Grieco, A. (2002) Risk assessment and management of repetitive movements and exertions of upper limbs: Job analysis, Ochre risk indices, prevention strategies and design principles (Vol. 2): Elsevier.

. Hagberg, C., Silverstein, B., Wells, R., Smith, MJ, Hendrick, H., Carayon, P., & Pérusse, M. (1995) Work related musculoskeletal disorders (WMSDs): a reference book for prevention . London: Taylor & Francis.

Mathiassen, SE, Burdorf, A., & Van der Beek, AJ (2002). Statistical power and measurement allocation in ergonomic intervention studies Assessing upper trapezius EMG amplitude. A case study of assembly work. Electromyography and Kinesiology Journal of, 12 , 45-57.

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