

ID	2250
Curricular Unit	Design of Complex Systems
Regent	Raquel João Henriques Soares dos Santos
Learning Outcomes	<ul style="list-style-type: none"> - Understand the components of a complex socio-technical system. - Understand the need for interaction and integration of the components of a complex socio-technical system. - Understand the role of ergonomics in the design of complex socio-technical systems.
Syllabus	<p>1. Definition system.</p> <p>1.1 General characteristics of a system.</p> <p>2. Process design of a system.</p> <p>3. Human factors of complex socio-technical systems:</p> <p>3.1 Factors contributing to the complexity of the system;</p> <p>3.2 Models of socio-technical systems;</p> <p>3.3 The need to focus on the interactions and integration in the system:</p> <p>3.3.1 physical, cognitive and psychosocial interactions of the system;</p> <p>3.3.2 Integrating human factors with other disciplines.</p> <p>3.4 The role of customer / user in the design of the product / service;</p> <p>3.5 macroergonomics in continuous design of the system;</p> <p>3.6 Human factors such as innovation.</p> <p>4. Estudo cases.</p>
Evaluation	<p>2 options:</p> <ul style="list-style-type: none"> - Continuous assessment - practical work in class. - Final Evaluation - Final Exam.
Bibliography	<p>Carayon, P. (2006) Human factors of complex sociotechnical systems. Applied Ergonomics, 37, 525-535.</p> <p>Czaja, S.; Nair, S. (2006) Human factors engineering and systems design. In Handbook of Human Factors and Ergonomics - Gavriel Salvendy Editor, Wiley, John Wiley & Sons, Inc.</p> <p>Hendrick, H.; Kleiner, B. (2002) Macroergonomics - Theory, Methods and Applications. Lawrence Erlbaum Associates. http://www.w3.org/</p>