Curricular Unit Form (FUC)

Course:	**FIRST CYCLE IN MECHANICAL ENGINEERING**					
Curricular Unit (UC)	**Occupational Safety and Health**			Mandatory		
				Optional		**X**
Scientific Area:	**Mechanical Design, Manufacturing and Industrial Maintenance**					
Year: **2º**	Semester: **2º**	ECTS:**4,0**		Total Hours: **3,0**		
Contact Hours:	T:	TP:**45,0**	PL:	S:	OT:	TT: **45,0**
Professor in charge		Academic Degree /Title		Position		
Ana Maria Brunhoso Pinto		**Mestre**		**Professora Adjunta**		

T- Theoretical ; TP – Theory and practice ; PL – Laboratory ; S – Seminar ; OT –Tutorial ; TT – Total of contact hours

Entry into Force	Semester: **Winter**	Academic Year: **2010/2011**

Objectives of the curricular unit and competences (max. 1000 characters)

- **Objectives:**

. To alert students to identify risks in working conditions.

To provide students with the theoretical background so that they can apply the existing relevant legislation in order to take preventive measures in laboring conditions which, in turn, contribute to implement safety and to protect the worker's health aiming to enhance productivity.

- **Specific Skills:**

Students acquire the capability to foresee potential risks, to estimate their intensity and their consequences so that they can develop adequate countermeasures in order to avoid accidents. Students are also instructed to persuade other members of the working staff for the importance of prevention.

Syllabus (max. 1000 characters)

Introduction to Industrial and Health concepts
Accidents at work
Professional Diseases
Noise Exposure at Work
Vibration Exposure at Work
Ergonomics
Illumination and Vision
Exposure to Cold and Heath
Loads Manual Transportation
Chemical Exposure and Contamination Risk

Machinery Handling Safety Fire Exposure Industrial Disasters Safety Measurements

Demonstration of the syllabus coherence with curricular unit's objectives (max. 1000 characters)
The syllabus of the Curricular Unit are intended to provide students with knowledge of the various risks associated with the work environment, enabling them to identify hazards and assess risks arising from activities under the safety, hygiene and health of workers and the safety of people and surrounding environment, by the ability to: interpret the concepts and values in question, according to the state of the art, legislation and standards currently in effect; organize, develop, coordinate and control activities to prevent and protect against occupational hazards; understand the scope of the themes of safety and occupational health and their interconnection with the global management system of the organization.

Teaching methodologies (including evaluation) (max. 1000 characters)
Teaching Method: Direct Method (Expositive and Demonstrative), Semi-direct Method (exemplification) and Active Method (Case Studies). Seminars with invited lecturers. Assessment: One final written test or a final examination, according to ISEL procedures.

Demonstration of the teaching methodologies coherence with the curricular unit's objectives (max. 3000 characters)
The direct, semi-indirect and active method allows the theoretical knowledge for the various contents, to be taught, enabling students to identify hazards and assess the risks, decide on the acceptability of such risks (workers, environment and surrounding population) as well as organization of preventive measures to mitigate consequences with direct application in case studies. The Seminars with invited lecturers, with examples of best practices in these matters, seeks to highlight the effective gains due to the investment in safety and by placing the safety and occupational health management as a strategic vector of the global management system of the organization.

Main Bibliography (max. 1000 characters)

- Miguel, A. (2005), *Manual de Higiene e Segurança do Trabalho* (7ª ed.), Porto. Porto Editora
- Cabral, F (2000), *Higiene, Segurança, Saúde e Prevenção de Acidentes de Trabalho* (3ª ed.). Lisboa. Verlag Dashofer.
- Fonseca, A. et all. (1996). *Concepção de Locais de Trabalho. Guia de Apoio*. Lisboa. IDICT
- Macedo, R. (2004). *Manual de Higiene do Trabalho na Industria* (2ª ed.). Lisboa. F. C. Gulbenkian
- Burriel, L., Germán (1999). *Sistemas de Gestion de Riesgos Laborales e Industriales* (2ª ed.). Madrid. Fundación Mapfre.
- International Labour Office (1998). *Encyclopaedia of Occupational Safety and Health* (4th ed.). Geneva. ILO.
- Hienrich, H. (1985). *Industrial Accident Prevention*. New York. McGraw-Hill.
- Less, F. (1996). *Loss Prevention in the Process Industries: Hazard Identification, Assessment and Control*. (2nd ed.). 3 Vols.. Oxford. Butterworth-Heineman.