

**TRIBOS**  
**Joint European master in tribology of surfaces and interfaces**

**Duration:** 24 months

**Course description:**

Tribology is highly interdisciplinary field dealing with science and technology of friction, wear and lubrication. Tribological solutions are directly related to energy consumption, maintenance and industrial investment costs. About 25% of all energy losses worldwide are due to friction, and about 1-3 % of countries GDP's can be saved yearly, mainly on account of reduced maintenance and increased investment cycles, which amounts to hundreds of billion Euros per year. Environmental awareness and emissions regulations that require reduction of pollution due to un-efficient processes, and use of harmful elements that are today vastly used in high-tech tribological components are additional highly demanding tasks, where tribology will play a critical role. Accordingly, better understanding and new tribological solutions are required to achieve greener and more efficient mechanical systems through new surface technologies, protective coatings, engineered topography and material properties, as well as advanced lubricants and additives, and novel lubrication technologies and concepts. In order to enable such tribological solutions engineers with high-level knowledge and skills from several fields are required.

TRIBOS is a consortium of four renown academic research groups in the field that offers a Joint European Master study in Tribology of Surfaces and Interfaces. University of Ljubljana, University of Leeds, University of Coimbra and Lulea University of Technology will provide to students comprehensive fundamental understanding and knowledge, as well as in-depth specialisation at macro and nano scale in the field of tribology, surfaces, interfaces, lubrication, and engineering skills to implement this knowledge in actual industrial projects. Numerous supporting associated partners from industrial and research sector worldwide will be involved in TRIBOS and will offer internships and various support, to link economic and academic sector. The Joint European Master in Tribology of Surfaces and Interfaces TRIBOS will integrate complementary competences of the four partner universities to provide unique high-class educational master programme at international level for better tribological solutions and consequently higher quality of life in terms of economic, energy, environmental and social aspects.

**Website:** <http://www.master-tribos.eu>

**Partners:**

UNIVERSITY OF LJUBLJANA, SLOVENIA (Co-ordinating Institution)  
UNIVERSITY OF COIMBRA, Portugal  
LULEÅ TEKNISKA UNIVERSITET, Sweden  
UNIVERSITY OF LEEDS, United Kingdom

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**Maximum grant:**

664 400 € (30 000 € consortium + 634 400 € scholarships), 2013