



INTERNATIONAL SEMESTER



MATERIALS AND SURFACE TREATMENTS ENGINEERING

Through exclusive training in Surface Coating and Treatments, you will master conventional and innovative processes so that you may adapt the properties of the surface of materials and parts optimally to their utilization, while respecting the environment.



WHO IS CONCERNED?

International students for their various curricula part of european (ERASMUS) and international exchange programmes.

WHEN DOES THE PROGRAM TAKE PLACE?

Spring semester, 1st February - 30th June
(A minimum of 15 weeks of classes)

ENGLISH IS THE COMMON LANGUAGE USED IN EVERY COURSE.

ADMISSION FEES

2000 € (Erasmus students and some of our partners are exempt from these costs).

The real cost of the semester is 7500 € but the complementary cost is supported by the French government.



CAREER OPPORTUNITIES



Strategic industrial sectors such as:

- automotive
- aeronautics
- aerospace
- electronics

- energy
- medical
- metallurgy
- surface treatment
- environment



MORE ABOUT THE INTERNATIONAL SEMESTER...

TRAINING INSTITUTIONS

- ENSIL-ENSCI (National Higher Engineering College)
- The Faculty of Sciences and Technologies

RESEARCH LABORATORY

IRCER, Institute of Research for Ceramics, laboratory internationally recognized for Ceramics and Surface Treatments Processes

TRAINING

20H A WEEK + TECHNICAL PROJECT

ECTS

GENERAL TOPICS	Initiation to French language and discovery of French culture** Industrial ecology : sustainability and recycling** Project Management/Test plan management*		5
SURFACE TREATMENT	Metallurgy and corrosion		7
	Surface engineering and applications: overview		
	Wet surface treatments	Introduction Surface preparation Anodizing Electroplating, Electroless plating Plating design regarding product functionalities	
	Dry surface treatments	Physical Vapour Deposition (PVD) Chemical Vapour Deposition (CVD/PECVD) Thermal spraying	
	Special process management		
	Lectures by professionals and visits of surface treatment plants		
	Practical work		3
PROPERTIES OF USE AND CHARACTERIZATION*	Film properties	Thermal properties* Mechanical properties	6
	Surface, microstructural and chemical characterization*	Electron Microscopy Diffraction Vibrational spectroscopy Surface characterization	
	Practical work		3
TECHNICAL PROJECT*			6

*Common modules with the «Materials and Surface Treatments engineering» international semester

**Common modules for all the international semesters of ENSIL-ENSCI

EDUCATIONAL CONTACT

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