

**Course offered for the PhD program  
in Civil, Chemical and Environmental Engineering  
Curriculum in Chemical, Material and Process Engineering –  
a.a. 2023/2024**

(Possibility of participation for students in other PhD cycles or other PhD courses)

**1. Title**

Surface treatments for anti-corrosion anti-drug performances

**2. Course Description**

The course aims to provide to future PhDs notions and fundamentals on surface treatments for anti-corrosion and anti-drug performances and methods for their characterization.

The course will include the following topics:

1. **Surface treatments:** organic coatings, superhydrophobic surfaces, liquid infused surfaces
2. **Electrochemical methods for the characterization of surface treatments:** Electrochemical Impedance Spectroscopy (EIS)
3. **Physical methods for the characterization of surface treatments:** optical microscopy, pull off test, dry film thickness measurements
4. **Laboratory tests on organic coatings:** EIS, pull off test, dry film thickness measurements.

**3. Course Organization**

The course, organized into a single module, will consist of classroom lessons and practical laboratory training. The course will be held in English.

**4. Teacher**

The course teacher will be Dr. Marina Delucchi.

**5. Duration and credits**

The course (10 hours) will consist of 3 theoretical lessons, 2 hours each, and 4 hours tutorial in the laboratory, for a total of 2 credits.

**6. Activation mode and teaching period**

The course will be held during the period January-February 2023 and a detailed calendar for lessons will be given to registered students.

**7. Deadline for registration**

Registration to the course must be made before December 15<sup>th</sup>. Students are requested to inform teacher by e-mail ([marina.delucchi@unige.it](mailto:marina.delucchi@unige.it)) about their registration.

**8. Final exam**

The final exam will consist in an interview on the topics covered by the course. The students are requested to contact teacher by email to establish the date of the exam.