

Conservation and Rehabilitation II:

Calendar: 1st Year 1st Semester

Contact Hours: 37h30 T/P + 7h30P/L + 7h30EL/OT

Syllabus:

Summarized History of Reinforced concrete structures

Assessment of state and performance of constructions.

Inspection techniques and diagnosis

Anomalies e causes

Assessment of assembled information on a construction and project definition

Rehabilitation and reinforcement techniques on RC structures

Steel Construction. Construction in iron/steel. Assessment. Inspection Techniques.

Anomalies and causes. Rehabilitation (repair) and reinforcement techniques.

Intended learning outcomes of the curricular unit:

Concerning reinforced concrete and steel structures, knowing thoroughly the properties of materials and corresponding deterioration mechanisms under external and internal actions. To have basic knowledge as regards the assessment of structures with the results of inspections. To know how to interpret inspection reports in order to allow identifying anomalies and their possible causes. To know thoroughly the relevant rehabilitation techniques used currently taking into account the materials, systems and methods. To implement o acquired knowledge to a practical case of rehabilitation project – RC or steel – identifying associated problems considering, with critical approach, several hypothetical solutions and/or an assembly of these. Introduction to the maintenance of structures.

Demonstration of the syllabus coherence with the curricular unit's intended learning outcomes:

The knowledge of the built heritage, the mechanisms of degradation of buildings, materials and intervention technologies are fundamental to the practice of engineering acts related to the maintenance and rehabilitation of buildings.

The syllabus of the course allow you to develop the skills of students in the areas considered essential under the maintenance and rehabilitation of buildings, including giving them the knowledge and skills required to describe and characterize the materials and construction processes, define the objectives and methodologies of assistance, select appropriate rehabilitation and maintenance techniques.

Teaching methodologies (including evaluation):

The teaching methodologies used are based on the expository method, using audiovisual media, to the theoretical contents complemented with the analysis of case studies related to constructive pathology with the technologies, the design and the execution of maintenance and rehabilitation works.

Case studies. A script will be prepared, by the Professor, with specific guidelines for the development of practical work. Throughout the semester, these will be accompanied by the teacher to clarify doubts and to foster critical analysis, developing the technical autonomy.