

<b>SCHOOL</b>	Interior and Urban Design (two-year program)
<b>ACADEMIC YEAR</b>	TWO-YEAR PROGRAM I - 2025/2026
<b>SUBJECT</b>	1456 Tecniche dei materiali
<b>TYPE OF SUBJECT</b>	Theoretical-Practical
<b>NUMBER OF HOURS PER LESSON</b>	4
<b>NUMBER OF ECTS CREDITS</b>	10
<b>DISTRIBUTION OVER THE ACADEMIC YEAR</b>	ANNUAL

### EDUCATIONAL OBJECTIVES AND EXPECTED RESULTS

The student acquires a comprehensive understanding of the materials used in historical and contemporary construction, as well as the recurring structural typologies in both the past and present. The student is capable of identifying the supporting elements and constituent materials, and can accurately describe their current condition. The student is familiar with the primary physical and mechanical properties of materials such as wood, steel, concrete, masonry, and elements of vernacular architecture. The student is capable of providing preliminary guidance on the static safety of a building or its components, outlining potential structural and material assessments. The student develops the capability to integrate architectural design with distributive and structural requirements. In particular, in accordance with the stipulations of the Dublin Descriptors

<b>Knowledge and understanding</b>	Professional knowledge of the primary physical and mechanical properties, identifiable in the majority of materials. Professional knowledge and understanding of the specific characteristics and unique features of individual materials.
<b>Applying knowledge and understanding</b>	The acquired knowledge must be applied in a series of micro-workshops, comprising individual and group exercises, to ensure that the student develops the appropriate technical language, critical skills, and autonomy in selecting the most suitable technical solution in the field of materials technology.
<b>Making judgements</b>	Students are expected to develop critical skills to accurately interpret the data and issues presented during the course.
<b>Communication skills</b>	The student must be capable of presenting their work (whether it be a paper, exercise, or small research project) using appropriate technical language, and must be able to discuss it in a critical and detailed manner.
<b>Learning skills</b>	The student is required to develop autonomy and the capacity for personal and individual in-depth exploration of the topics presented during the lessons. The written assignments, group discussions, and meaningful classroom interactions are all designed to achieve this objective.

<b>CONTENTS</b>	<p>Building materials: reinforced concrete, steel, wood, laminated wood, load-bearing and non-load-bearing masonry, plastics, and rocks. - Definition and Types of structural elements in modern and historical construction; - An overview of the statics and equilibrium of structural elements; - An introduction to advanced materials; - The renovation of historical complexes and listed buildings: intervention strategies; - An in-depth examination of specific construction techniques and materials, such as clay and traditional techniques in contemporary times, and their application from a sustainable perspective; - The roof system; - The slabs; - Internal partitions and doors and windows; - Insulation: an overview of the energy consumption of buildings and potential solutions.</p>
<b>ADOPTED METHODOLOGY</b>	<p>[X] In Person          Frontal instruction, group work, and case analysis are pertinent to the architectural module. Bonetti, development of specialized exercises for the in-depth examination of various themes, accompanied by the development of customized layouts from a design perspective. Each exercise will be conducted by simulating the development of a project from scratch (or a brochure related to a hypothetical professional assignment) in which the student can formulate their own vision of the topic addressed, thereby acquiring the necessary knowledge on the primary physical, mechanical, and technological characteristics of the materials analyzed, integrating architectural design and distribution requirements through a genuinely sustainable approach.</p>
<b>ASSESSMENT METHODS</b>	<p>An optional mid-term test will be offered, and the completed exercises will be evaluated. The examination comprises an oral interview, during which the graphic materials produced in class will be discussed.</p>