

COURSE DESCRIPTION – ACADEMIC YEAR 2024/2025

Course title	Material Sciences for energy efficiency
Course code	42620
Scientific sector	ING-IND/22
Degree	Professional Bachelor in Wood Technology (LP-03)
Semester	1
Year	2
Credits	3
Modular	No
Total lecturing hours	-
Total lab hours	30
Attendance	Attendance is not compulsory but highly recommended.
Prerequisites	-
Course page	Microsoft Teams and https://ole.unibz.it/
Specific educational objectives	The aim of the Lab course is to apply the knowledge of the properties and characteristics of materials acquired in the corresponding course. Among the materials analyzed during the course, the different thermal and mechanical properties will be compared and the most suitable material for the purpose of the practice exercise will be adopted.
Lecturer	Chiara Tardini
Contact	chiara.tardini@unibz.it
Scientific sector of lecturer	
Teaching language	English
Office hours	Thursday 16:30 - 17:30, or arrange beforehand by email.
Lecturing Assistant (if any)	-
Contact LA	
Office hours LA	
List of topics	<ul style="list-style-type: none"> • Drawing of a very plain building, 1 floor tall • Choice of materials for the structural elements, windows and insulating materials • Analysis of thermal bridges and how to prevent them
Teaching format	Laboratory, Working in group
Learning outcomes	<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> • D1.1 – Knowledge of the key concepts and technologies of building materials • D1.2 – Understanding of the techniques required for an energy effective use of building materials (prevention of thermal bridges...) <p>Applying knowledge and understanding:</p> <ul style="list-style-type: none"> • D2.1 – to find the proper material in accordance to the need of the building requirements <p>Making judgments</p>

	<ul style="list-style-type: none"> D3.1 – Ability to autonomously select the most proper material according to the specific energy saving need <p>Communication skills</p> <ul style="list-style-type: none"> D4.1 – Ability to use English at an advanced level with particular reference to disciplinary terminology during the presentation of the work done throughout the semester. <p>Learning skills</p> <ul style="list-style-type: none"> D5.1 – Ability to deal with problems in a systematic and creative way and to appropriate problem-solving techniques.
Assessment	<ul style="list-style-type: none"> The final evaluation of the Laboratory will be Passed/Not Passed. The students will present the outcome of the work carried out during the semester in the last week of the Laboratory and their work will be assessed. The Passed evaluation is essential to access the written (and oral) exam.
Assessment language	English
Assessment Typology	Monocratic
Evaluation criteria and criteria for awarding marks	<p>The evaluation of the Laboratory of Material Sciences for energy efficiency is considered "Passed" if all the steps of the practice exercise given at the beginning of the Course.</p> <p>Relevant for the assessment of practice exercise:</p> <ul style="list-style-type: none"> clarity of drawings, knowledge of thermal properties of the materials adopted for the thermal insulation, knowledge of the solutions to prevent thermal bridges skills in critical thinking, evaluate, and establish relationships between topics; explanation of the choice of building materials <p>Same evaluation criteria for non-attending students.</p>
Required readings	
Supplementary readings	
Software used	Autocad