

## Syllabus

### Course description

<b>Course title</b>	Material Sciences
<b>Course code</b>	42312
<b>Scientific sector</b>	ING-IND/22
<b>Degree</b>	Bachelor in Wood Engineering
<b>Semester</b>	1 <sup>st</sup>
<b>Year</b>	II
<b>Academic year</b>	2022/23
<b>Credits</b>	6
<b>Modular</b>	No

<b>Total lecturing hours</b>	36
<b>Total exercise hours</b>	24
<b>Attendance</b>	Highly recommended
<b>Prerequisites</b>	-
<b>Course page</b>	<a href="https://www.unibz.it/en/faculties/sciencetechnology/phd-in-food-engineering-and-biotechnology/phd-students-feb/person/42844-chiara-tardini">https://www.unibz.it/en/faculties/sciencetechnology/phd-in-food-engineering-and-biotechnology/phd-students-feb/person/42844-chiara-tardini</a>

<b>Specific educational objectives</b>	<ul style="list-style-type: none"> <li>• Base course</li> <li>• ING-IND/22</li> </ul> <p>The course gives a general overview of scientific contents related to science of materials.</p> <p>The aim of the course is the knowledge of the properties and characteristics of materials. The materials that will be dealt with are: metals and metal alloys, ceramics, polymers, composites, glass and reinforced concrete. Also the mechanical behavior of the combination of these materials with timber will be analysed.</p>
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<b>Learning outcomes</b>	<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> <li>- of the chemical composition of materials,</li> <li>- of the atomic and crystalline structure of the mechanical behavior and properties</li> <li>- of their decay and related methods to prevent it.</li> </ul> <p>Applying knowledge to find the proper solution to simple exercises in order to test the knowledge of the content of the course.</p> <p>Making judgments about the best solution in order to prevent (or to recover) decayed materials.</p>
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	<p>Communication skills: active listening, clarity and concision, language properties (in the course language)</p> <p>Learning skills: responsibility, time organization, independent work, initiative.</p>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>• Written and oral: According to what will be allowed, the students will be asked to take a written exam with exercises to solve in order to test knowledge application skills and an oral one with questions related to the topics of the course.</li> <li>• Students attending the course will be allowed to split the written exam in two parts (one in November and the second one early in January) in order to have only the oral exam in the winter session.</li> </ul>
<b>Assessment language</b>	English
<b>Evaluation criteria and criteria for awarding marks</b>	<p>The final grade will be the sum of the two parts 70% according to the grade of the written exam (or of the two written exams if carried out before the end of the semester) and 30% of the oral exam.</p> <ul style="list-style-type: none"> <li>• Relevant for written exam: being able to solve exercises and clarity of answers for the questions;</li> <li>• relevant for oral exam: clarity of answers, mastery of language (also with respect to teaching language), ability to summarize, skills in critical thinking.</li> </ul>
<b>Required readings</b>	Callister W., Rethwisch D.G., <i>Materials Science and Engineering</i> , Wiley & Son
<b>Supplementary readings</b>	Shetty M. S., <i>Concrete Technology</i> , Chand & Company