

COURSE DESCRIPTION – ACADEMIC YEAR 2023/2024

Course title	Physics
Course code	42605
Scientific sector	FIS/03
Degree	Professional Bachelor in Wood Technology (LP03)
Semester	2
Year	1
Credits	5
Modular	No
Total lecturing hours	50
Total lab hours	-
Attendance	Recommended
Prerequisites	Mathematics
Course page	Microsoft Teams and https://ole.unibz.it/
Specific educational objectives	<p>This is a basic course on the fundamental of physics. The course aims to give the attendants a basic scientific understanding on mechanics, thermodynamics, electricity and magnetism.</p> <p>The lecture is strongly linked to the associated course: 42606 Laboratory of Physics applied to Mechanics</p>
Lecturer	Niko Münzenrieder (https://www.unibz.it/en/faculties/engineering/academic-staff/person/42095-niko-muenzenrieder)
Contact	L604 niko.muenzenrieder@unibz.it
Scientific sector of lecturer	FIS/03
Teaching language	German
Office hours	After consultation and agreement with lecturer, arrange beforehand by email.
Lecturing Assistant (if any)	
Contact LA	
Office hours LA	
List of topics	<ul style="list-style-type: none"> • Basics e.g.: physical quantities; units; dimensions of physical quantities; vectors. • Mechanics e.g.: Newtonian mechanics; mechanical forces; energy; power, momentum; conservation of energy. • Thermodynamics e.g.: phases of matter; thermal properties of matter; ideal gases; first and second law of thermodynamics. • Electrostatics e.g.: electric charges, Coulomb force; potentials, and fields; capacitors. • Electric current: DC/AC currents; Ohm's law; Joule's law. • Magnetism: permanent magnets; electromagnets magnetic forces and induction.
Teaching format	Frontal lectures and occasional exercises in class

<p>Learning outcomes</p>	<p><u>Knowledge and understanding</u></p> <ol style="list-style-type: none"> 1. Knowledge and understanding of physical laws of: <ul style="list-style-type: none"> - Mechanics - Thermodynamics -Electricity and Magnetism <p><u>Applying knowledge and understanding</u></p> <ol style="list-style-type: none"> 2. Ability to analyse and solve simple problems on mechanics, thermodynamics, electricity and magnetism. <p><u>Making judgements</u></p> <ol style="list-style-type: none"> 3. Students are expected to develop the ability to judge the plausibility of results. <p><u>Communication skills</u></p> <ol style="list-style-type: none"> 4. Further development of a quantitative, technical, and scientific terminology to express ideas and opinions about physical phenomena. <p><u>Ability to learn</u></p> <ol style="list-style-type: none"> 5. Development of an analytic attitude enabling the student to divide a problem into sub-tasks which can be solved using previously acquired knowledge. 												
<p>Assessment</p>	<p>Formative assessment</p> <table border="1"> <thead> <tr> <th>Form</th> <th>Length /duration</th> <th>ILOs assessed</th> </tr> </thead> <tbody> <tr> <td>In-class exercises</td> <td>Continuously as part of course-accompanying exercises</td> <td>1-5</td> </tr> </tbody> </table> <p>Summative assessment</p> <table border="1"> <thead> <tr> <th>Form</th> <th>Length /duration</th> <th>ILOs assessed</th> </tr> </thead> <tbody> <tr> <td>Oral</td> <td>20 minutes</td> <td>1-5</td> </tr> </tbody> </table>	Form	Length /duration	ILOs assessed	In-class exercises	Continuously as part of course-accompanying exercises	1-5	Form	Length /duration	ILOs assessed	Oral	20 minutes	1-5
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<p>Assessment language</p>	<p>German</p>												
<p>Assessment Typology</p>	<p>Commission</p>												
<p>Evaluation criteria and criteria for awarding marks</p>	<p>The oral examination consists of 3 topics per person:</p> <ol style="list-style-type: none"> 1. Explanation of a topic from the lecture (correct answer is sufficient to pass). 2. Application of a known principle from the lecture to a new problem (correct answer improves the mark). 3. Discussion of an unknown problem related to the lecture (correct answer/convincing discussion is necessary to achieve a "cum Laude" distinction). <p>All answers/discussion will be oral but may be supported by sketches and written formulae on paper.</p> <p>The following will be assessed:</p> <ul style="list-style-type: none"> • The correctness of the approaches and steps to the solution, and the correct use of physical quantities and units 												

	<ul style="list-style-type: none"> The correctness of the answers and arguments presented, and the terminology used. <p>To pass the exam the final score must be greater or equal to 18. If the final score is greater than 30, a "with honors" is awarded.</p>
Required readings	Blackboard
Supplementary readings	<p>Various textbooks can be used as a reference, for example:</p> <ul style="list-style-type: none"> Physik für Bachelors, Johannes Rybach, Carl Hanser Verlag, 3. Auflage, 2007 (only in German). Mechanics and Thermodynamics, Wolfgang Demtröder, Springer International Publishing, 2017. Electrodynamics and Optics, Wolfgang Demtröder, Springer International Publishing, 2013. Physics for Scientists and Engineers with Modern Physics, Douglas C. Giancoli, Pearson, 4th edition, 2008.
Software used	-