

Module title	0.2 Bridging technology
Workload (ECTS)	6 ECTS
Module coordinator	Prof. Dr. Marcel Baak Prof Dr. Simon Kleiner
Contributing lecturers	<ul style="list-style-type: none"> • Dr. Eduard Wyss
Entry requirements	none
Description	<p>Bridging modules are part of the basis category and will take place during the first quarter of the first semester. They lay the ground for interdisciplinary learning and teaching in the subsequent modules. The bridge module "technology" imparts basic knowledge in the fields of chemistry, physics and materials science, which is required for the technically oriented subsequent modules.</p> <ul style="list-style-type: none"> • adapted basics in chemistry • Polymer chemistry: production and properties • Extraction and refining of metals • Processing-Microstructure-Properties relationship of materials • Adapted basics in physics • Fundamental concepts and aspects of power engineering
Learning outcomes and competences	<p>Competences:</p> <p>Students:</p> <ul style="list-style-type: none"> • have developed generic skills in the context of chemistry, physics and material science which are applicable in many other contexts • have attained a basic knowledge and competence which is fundamental for subsequent modules <p>Outcomes:</p> <p>By the end of this course, students will be able to understand certain basic concepts, simple theoretical principles in chemistry, physics and materials science</p>
Assessment of learning outcomes	<ul style="list-style-type: none"> • Short tests within the 7 weeks of presence teaching (50%) • final test (50%)
Didactic approach	<ul style="list-style-type: none"> • blended learning • contact teaching • Inverted classroom
Project-based learning	
Links to other modules	<ul style="list-style-type: none"> • 1.1 Technological cycle: materials and processes • 1.3 Pathways to net zero GHG emissions in the energy and chemical sectors • 1.4 Pathways to net zero GHG emissions in the mobility sector • 1.7 Circular use of materials • 4.2 Scientific methods II
Bibliography	Halliday Resnick Walker, Fundamentals of Physics



	Douglas C. Giancoli, Physics: Principles with Applications
	Edward W. Pitzer, Introductory Chemistry, 2014
Language	English
Location	TBD