

<b>Module title</b>	<b>0.3 Bridging life sciences</b>
<b>Workload (ECTS)</b>	6 ECTS
<b>Module coordinator</b>	<a href="#">Prof. Dr. Silvia Zingg</a>
<b>Contributing lecturers</b>	<ul style="list-style-type: none"> <li><a href="#">Dr. Ruth Debernardi</a></li> <li><a href="#">Dr. Christian Trindler</a></li> </ul>
<b>Entry requirements</b>	none
<b>Description</b>	<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 bridging module "Life sciences " imparts basic knowledge in the fields of chemistry, biology and ecology, which is required for the life cycles and energy oriented subsequent modules.</p> <ul style="list-style-type: none"> <li>Adapted basics in chemistry, biology and ecology</li> <li>Structure and functions of cells and organisms</li> <li>Material and energy flows in organisms and ecosystems</li> </ul>
<b>Learning outcomes and competences</b>	<p><b>Competences:</b></p> <p>Students...</p> <ul style="list-style-type: none"> <li>understand and apply the basics of organic chemistry.</li> <li>describe the structure of living organisms and cells as well as the properties of organic macromolecules.</li> <li>describe the energy and material cycles in living organisms and in ecosystems.</li> <li>explain what influence humans have on material cycles and the environment.</li> </ul> <p><b>Outcomes:</b></p> <p>By the end of this course, students will be able to understand the basic concepts and principles in chemistry, biology and ecology</p>
<b>Assessment of learning outcomes</b>	<ul style="list-style-type: none"> <li>Short tests within the 7 weeks of presence teaching (50%)</li> <li>Final written exam (50%)</li> </ul>
<b>Didactic approach</b>	<p>The course follows a Blended Learning concept, where most of the knowledge transfer is done during asynchronous self-study parts. Hereby Moodle will be the learning platform and will guide the students through the learning process. On Moodle screen-casts, videos, documents and quizzes (self-evaluation) will be available. The topics will be presented using case studies and examples of relevance for the MSc studies.</p> <p><b>Workload (6 ECTS = 180 h)</b></p> <ul style="list-style-type: none"> <li>Synchronous contact teaching 3h (4 Lessons) per week = 21h</li> <li>Asynchronous learning Moodle 12 h per week = 84h</li> <li>Self study = 75h</li> </ul>
<b>Project-based learning</b>	
<b>Links to other modules</b>	<ul style="list-style-type: none"> <li>1.2 Biological cycle: environmental systems</li> </ul>



	<ul style="list-style-type: none"><li>• 1.3 Pathways to net zero GHG emissions in the energy and chemical sectors</li><li>• 1.5 Pathways to net zero GHG emissions in the food sector</li><li>• 1.7 Circular use of materials</li></ul>
<b>Bibliography</b>	Campbell et al. Biology: A Global Approach. 12 <sup>th</sup> edition, Pearson. ISBN978-1-292-34163-7
<b>Language</b>	English
<b>Location</b>	Bern