






The Nanobiotechnologie Schwerpunkt

Institute for Biologically inspired materials
 Department of Nanobiotechnology
 BOKU Wien
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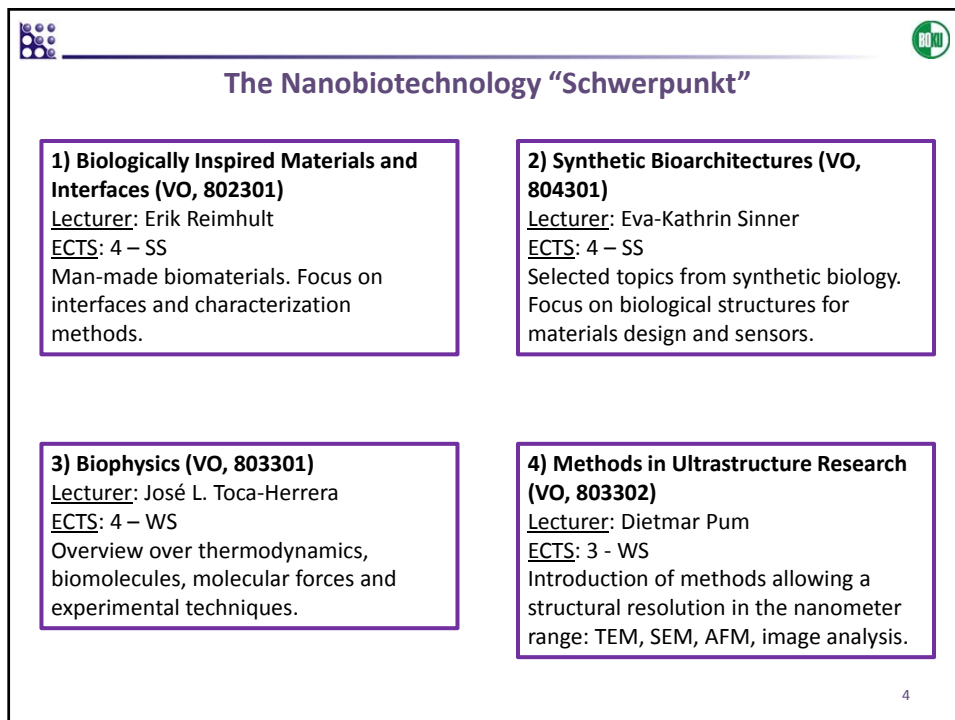
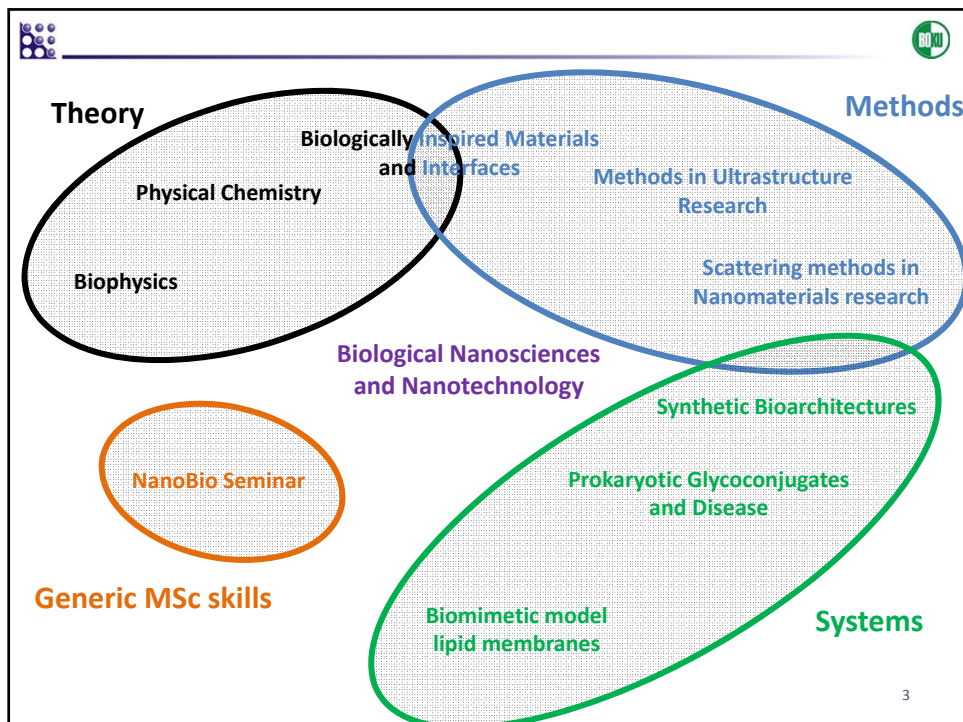
The Nanobiotechnology “Schwerpunkt”



Possible reasons to follow the Schwerpunkt designed by the DNBT:

- ✓ If you want to dig deeper into the world of molecular interactions beyond the “lego” or standard biology text book cartoons.
- ✓ Go beyond “what” works to “how” it works...and how you could make new things work.
- ✓ If you are interested in the principles behind the many new techniques you can use to characterize biological and nanotechnological samples. Learn their strengths and limitations.
- ✓ If you are interested in current state-of-the-art man-made biomaterials and their role in biotechnology.
- ✓ If you are interested in how biological molecules or man-made mimics of them can be used to construct new high-performance and smart materials.
- ✓ If you are interested in the nanomaterials aspects of synthetic biology

... and of course if you are generally interested in biological nanoscience and nanotechnology, want to do your thesis work with us, experience some completely new and possibly unusual teaching at the BOKU.

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5) Prokaryotic Glycoconjugates and disease (VO, 802302)
Lecturer: Christina Schäffer
ECTS: 3 – SS
 Overview on bacterial glycoconjugates, including architecture, occurrence, biosynthesis, molecular biology, analysis

6) Biomimetic model lipid membranes (VO, 804302)
Lecturer: Bernhard Schuster
ECTS: 3 – SS
 Overview on artificial model lipid membrane systems, their key role in membrane protein research, and applications in the life sciences.

7) NanoBio Seminar (SE, 804303)
Lecturer: Jose. L. Toca-Herrera
ECTS: 2 - WS
 Introduction to paper writing and evaluation, literature search, and presentation of scientific problems.

8) Scattering methods in Nanomaterials research (VO, 892304)
Lecturer: Helga Lichtenegger
ECTS: 2 – SS
 Basic understanding of x-ray and neutron methods in materials science with emphasis on nanostructures.

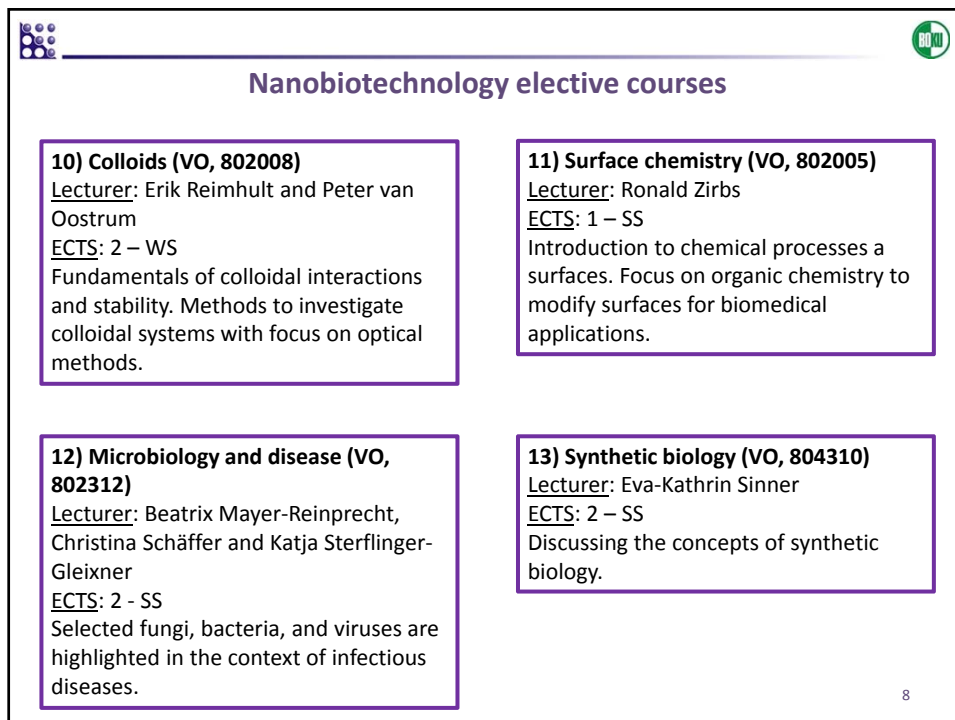
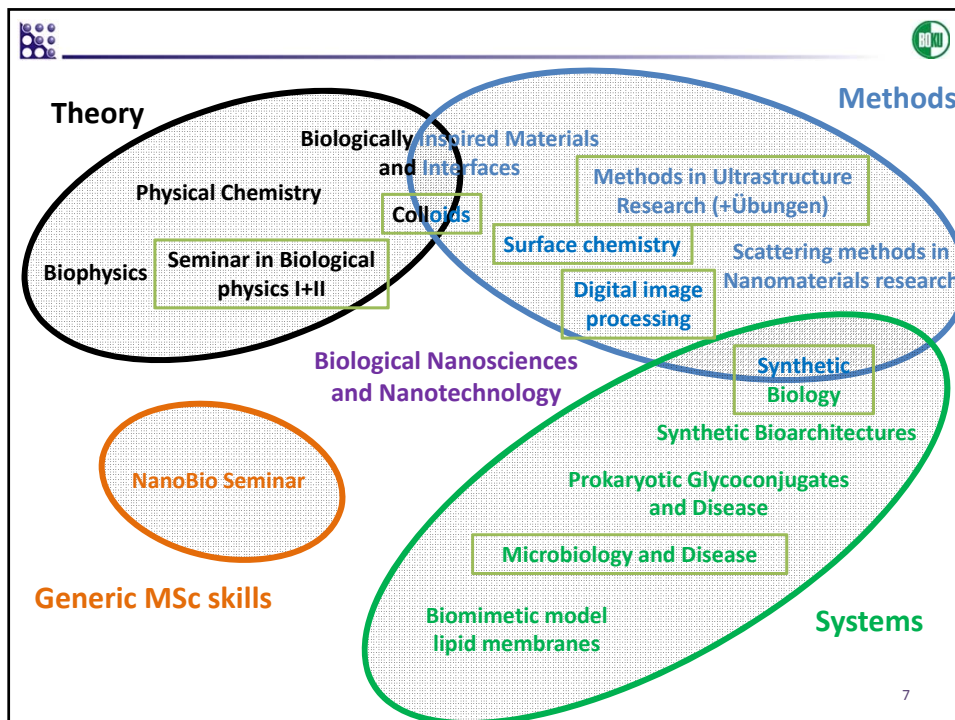
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9) Physical Chemistry (VU, 803303)
Lecturer: Erik Reimhult, José L. Toca-Herrera
ECTS: 2 – SS
 Topics of physical chemistry relevant for (nano)biosciences. Complements the Biophysical chemistry lecture.

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Nanobiotechnology elective courses

<p>14) Seminar in Biological physics I (VU, 803402) <u>Lecturer:</u> José L. Toca-Herrera <u>ECTS:</u> 2 – WS Mathematics and classical physics applied to biosciences.</p>	<p>15) Seminar in Biological physics II (VO, 803403) <u>Lecturer:</u> José L. Toca-Herrera <u>ECTS:</u> 2 – SS Mathematics and modern physics applied to biosciences.</p>
<p>16) Digital image processing (VO, 803310) <u>Lecturer:</u> Dietmar Pum <u>ECTS:</u> 2 - SS Overview of modern methods in the visual improvement, processing and analysis of digital image data.</p>	<p>17) Selected topics in high resolution microscopy (VO, 803.001) <u>Lecturer:</u> Dietmar Pum <u>ECTS:</u> 2 – WS In depth introduction to high resolution Transmission- and Scanning Electron Microscopy (TEM and SEM), Tomography, and preparation techniques</p>

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