Biophysical Chemistry II (iMOS)

Module	Credits	Workload	Term	Frequency	Duration
12 EC	5 CP	150 h	1. Sem.	WiSe	1 Semester

Courses	Contact hours	Self-Study	Group size
a) Lectures b) Exercises c) Seminar	a) 2 SWS b) 1 SWS c) 1 SWS	90 h	30 Students

Prerequisites

Knowledge in basic Physical Chemistry.

Learning outcomes

After successful completion of the module/course, students will be able to:

- Acquire advanced knowledge in experimental methods in the investigation of dynamics and thermodynamics of proteins and membranes, and on protein reaction and function based on selected examples
- Understand their applications, advantages, and disadvantages of the methods
- Analyze and screen relevant literatures independently
- Develop presentation skills in front of an audience
- Utilize digital techniques to prepare and conduct a presentation

Content

Advanced Biophysical techniques:

- Microcalorimetry in protein characterization
- Fluorescence-based methods in protein interactions
- Advanced fluorescence microscopy
- Fourier transform spectroscopy
- Attenuated total reflection (ATR) spectroscopy
- Vibrational spectroscopy in biomolecular solvation
- Scanning probe microscopy (SPM) in biochemistry

Teaching methods

Lecture (2 SWS, 30 h), Exercise (1 SWS, 15 h), Seminar (1 SWS, 15 h).

Mode of assessment

Participation in all seminars and presentation about an assigned publication.
Written exam of 60 mins.

Requirement for the award of credit points

Pass both parts: presentation (50%) and written exam (50%).

Module applicability

M.Sc. iMOS, cross-posted to M.Sc. Chemistry, M.Sc. Biochemistry

Weight of the mark for the final score

Weighted according to CPs.

Module coordinator and lecturer(s)

Lecturers from Physical Chemistry departments.

Further information