

Title of module

Advanced Practical in the Focal Point Programme
"Proteins: Structure and Function" VZ 185851
"Expression, Purification and vibrational spectroscopy of proteins"

Credit points

7.5

Available in semester(s)

2

Hours per week

9

Compact course



Lecturer(s)

Carsten Kötting

Teaching methods

5 weeks all day advanced laboratory course with a written report **Please note:** A second Advanced Practical will have to be performed in the same semester to earn the full complement of 15 credits

Evaluation of learning progress

Active participation, feedback during independently performed experiments, project discussions with the supervisor

Mode of examination

Active and successful participation in the practical and the written project report

Learning objectives

The student will work closely (1:1) with a PhD student on a current research project. State of the art molecular biology will be combined with advanced vibrational spectroscopy.

Soft skills

interaction with the members of a research laboratory, handling of biophysical data, presentation of results

Contents of module

- heterologous expression of a proteins, e.g. GTPases of the Ras superfamily
- purification of the proteins by ion exchange, gelfiltration and / or affinity chromatography
- investigation of the proteins by spectroscopic methods, including time-resolved UV/Vis spectroscopy, time-resolved FTIR spectroscopy, vibrational microscopy and fluorescence spectroscopy.
- handling of complex data and data processing

(Note that this outline is an example, the actual content can vary)