| **Title of the module** | **Selected aspects of biochemistry and molecular biology** | | |
|---|---|---|---|
| **Term/semester** | Summer term / 2 | | |
| **VAK-Number** | | | |
| **Credit points** | 6 ECTS | | |
| **Compulsory /elective** | Compulsory course | | |
| **Teaching methods** | Method | SWS | CP |
| | Lecture<br>Exercises | 2 (28 h)<br>2 (28 h) | 3<br>3 |
| **Self studies** | Preparation of the exercises 62 h<br>learning for the exam 62 h | | |
| **Module representative** | Prof. S. Kelm | | |
| **Instructors** | Prof. S. Kelm (Biochemistry), Prof. Stick (Cell Biology), Prof. R. Dringen (Biochemistry) | | |
| **Examiner** | Prof. S. Kelm, Prof. Stick, Prof. Dringen | | |
| **Objectives** | • quantitative use of key methods in biochemistry, molecular and cell biology<br>• elaborating the regulation of metabolic networks<br>• strategies to develop homolgy-based protein models for the analysis of structure-function relationships of receptors and enzymes<br>• develop independently an expertise in a new topic based on basic knowledge and information from literature and databases | | |
| **Content of teaching** | *The lectures and exercises cover selected aspects of the following topics:*<br>• Cell Biology<br>• Molecular Biology<br>• Metabolism<br>• Regulatory networks<br>• Homeostasis<br>• Protein folding<br>• Sequence alignment creation and evaluation<br>• Homology modelling | | |
| **Educational objectives** | • Ability to understand contents of “state of the art” research topics<br>• Ability to work independently or in groups on the presentation of one of the topics<br>• Ability to critically discuss the work in exercises.<br>• Ability to present the final results in short talks. | | |
| **Evaluation of learning progress** | Progress of work and discussion during the exercises. | | |
| **Assessment** | Written test (100%) | | |
| **Frequency** | Each summer semester | | |
| **Usage in other degree programmes** | The module is also open for students of the diploma course of biology (examination terms biochemistry, molecular biology and cell biology) as well as for students of the diploma course of studies chemistry (main subject biochemistry) | | |
| **Premise** | Successful participation in modules A and B | | |