Title of the module	**Basics in biochemistry and molecular cell biology**			
Term/semester	Winter term / 1			
VAK-Number	Will be assigned centrally			
Credit points	9 ECTS			
Compulsory /elective	Compulsory course			
Teaching methods	Method	SWS	CP	
	Lectures Exercises	3.4 (48h) 3.4 (48h)	4.5 4.5	
Self studies	Preparing for the exercises 80 h Learning for the exam 90 h			
Module representative	Prof. S. Kelm			
Instructors	Prof. S. Kelm (Biochemistry), Prof. R. Stick (Cell Biology), Prof. A. Becker (Molecular Genetics), Prof. B. Reinhold-Hurek (Microbiology), Prof. F. Widdel (Microbiology)			
Examiner	Prof. Dr. S. Kelm, Prof.R. Stick, Prof A. Becker, Prof. B. Reinhold-Hurek, Prof. F. Widdel			
Objectives	Based on the knowledge in biochemistry certified by the admission test the course provides the essential theoretical knowledge for the specialisation for all biological disciplines which deal with biochemical and cell biology topics.			
Content of teaching	*The course deals with the following topics:* • Nucleic acids structure • Thermodynamic basics • Protein structure • DNA replication • Chromosomal and extra chromosomal nucleic acids • Membranes and Vesicular transport • Transcription and RNA processing • Redox potential, membrane potential • Gene regulation in prokaryotes • Protein biosynthesis (translation and translocation) • Gene transfer and viral vectors • Cytoskeleton • DNA Replication and hybridisation • Nuclear-cytoplasmic transport of macromolecules • Transport of small molecules across membranes • Aerobic pathways and repiratory chains			
Educational objectives	• Ability to understand the basics in Biochemistry and Molecular Cell Biology based on the a.m. topics			
Evaluation of learning progress	Successful completion of the exercises			
Assessment	Written test (100%)			
Frequency	Each winter semester			
Usage in other degree programmes	The module is also offered for students of the diploma course of studies biology (examination terms biochemistry, molecular biology and cell biology) as well as for students of the diploma course of studies chemistry (main subject biochemistry)			
Requirements	Admission to the master course ”Biochemistry and Molecular Biology”			