

Program of Studies:	Master Program Bioinformatics
Name of the module:	Special-topic Lecture Biosciences: Medical Biotechnology
Abbreviation:	B-M-5
Modules:	Lecture
Semester:	1 st – 3 rd , each summer semester
Responsible lecturer:	Prof. Dr. Heiko Zimmermann
Lecturer:	Prof. Dr. Heiko Zimmermann, Prof. Dr. Günter Fuhr
Language:	German
Level of the unit/ Mandatory or not:	Graduate course / mandatory elective
Course type/weekly hours:	Lecture: 2 h
Total workload:	90 h = 30 h of classes and 60 h private study
Credits:	3
Entrance requirements:	Basic knowledge biochemistry and biology
Aims/Competences to be developed:	Advance knowledge biochemistry and biology
Content:	<ul style="list-style-type: none"> • Biocompatibility I: Basics • Biocompatibility II: Implants • Nanobiotechnology I • Nanobiotechnology II • Electric manipulation of cells • Immobilization and encapsulation • Cryobiotechnology I: Biophysical and cell biological basics • Cryobiotechnology II: Life in low temperatures: Algae, bacteria, plants) • Cryobiotechnology III: Cryo conservation and cryo banking (stem cell data bases, reproductive medicine) • Cryobiotechnology IV: Medical application and outlook (tissue banking) • Cell therapies I: Overview • Cell therapies II: Immune isolated transplantation • Cell therapies III: Stem cell therapy • Cell therapy IV: Regenerative medicine and outlook
Assessment/exams:	Written exam