## Program of Studies:
Master Program Bioinformatics

## Name of the module:
Special-topic Lecture Biosciences: Medical Biotechnology

## Abbreviation:
B-M-5

## Modules:
Lecture

## Semester:
1st – 3rd, 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:
- 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