

Module Name	Tissue Engineering
Module Number	Eul-BMT-E-GERE
Responsible Lecturer	Prof. Dr. Hans-Peter Wiesmann studiendokumente.mw@tu-dresden.de
Qualification Objectives	Students are able to comprehend the complex interrelations of tissue and organ regeneration, understand the existing limitations in this rapidly growing biomedical research field, and independently reflect on them.
Contents	The module covers the fundamental principles of tissue engineering, an interdisciplinary research field that combines technical concepts for the reconstruction of tissues and organs using cells, scaffolds, and biomolecules. Additional topics include the basic biological aspects of cell-to-cell and cell-to-extracellular matrix interactions, cellular responses to biomaterials, relevant immune system reactions, technical aspects such as the production of suitable scaffolds as carrier materials and the biomaterials used for this purpose, the extraction of stem cells, cell culture techniques, and clinical applications.
Teaching and Learning Forms	2 hours per week of lectures, 1 hour per week of exercises, 1 hour per week of practical lab courses, and self-study. The language of instruction for lectures, exercises, and practical lab courses may be German or English and will be determined by the lecturer at the beginning of the semester and announced in written form.
Prerequisites for Participation	The competencies to be acquired in the module Biochemical Analytical Measurement Technology are required.
Usability	The module is an elective module within the elective area "Medical-Economic Specialization" according to § 6 Paragraph 3 SO and § 33 Paragraph 3 PO of the main study program in the diploma program Biomedical Engineering.
Prerequisites for the Award of Credit Points	Credit points are awarded when the module examination is passed. The module examination consists of a non-public oral examination lasting 15 minutes, conducted as a group examination. The examination language is chosen by the student and may be either German or English.
Credit Points and Grades	5 credit points can be earned through the module. The module grade corresponds to the grade of the examination performance.
Frequency of the Module	The module is offered every winter semester.
Workload	The total workload is 150 hours.
Duration of the Module	The module lasts one semester.