

Course name	Tissue Engineering and Bioethics			
In semester number	BTB6/BTB7			
ECTS- Credits (30 hours)	2			
Workload / hours	Total 60	Contact time 30	Self-study 20	Preparation for examination 10
Prerequisites	Courses Cell Culture Techniques, Medical Biotechnology			
Total target	Knowledge of interdisciplinary methods in Tissue Engineering including state of the art of science and technology. Scientific developments will be discussed taking bioethics into account.			
Content	<p>Tissue Engineering and Regenerative Medicine</p> <ul style="list-style-type: none"> - stem cells: proliferation and differentiation of various origins - legal aspects, national and international - Bioethics, Science and Society - Biomaterials and Biocompatibility - relevant scientific developments for example in skin, heart valves, kidney, liver, pancreas, nerves, cartilage, bone etc. - laboratory experiment: cellular differentiation in transfiltersystems 			
Reference material	Original publications, course manual H. Hauser and M. Fussenegger, Tissue Engineering, Totowa, Humana Press, 2007			
Module owner	B. Weiss			
Language	English			

Description

Type of instruction/ type of learning	Hours /week	Targets, learning outcomes	Type of assessment	Estimated student workload in hours
Seminar and lectures	1	Introduction lectures to cellular requirements in development and differentiation, biomaterials and bioethics. Individual presentations Discussion on bioethics with members of other faculties	Oral presentation, poster presentation, discussion	30
Laboratory including preparation and lab report	1	Cultivation of a cell line in transfiltersystems. Measurement of cellular differentiation by transepithelial resistance (TEER). Regeneration assay or sample application according to FDA guideline.	Lab report	30
Total	2			60