

Modules M.Sc. Biochemistry and Molecular Biology

Titel of the module	Development of Microbial Strains			
Term/semester	Summer semester			
VAK-Number	Will be assigned centrally			
Credit points	6 ECTS			
Compulsory/ elective course	Core elective course			
Teaching methods	Method	SWS	CP	
	Lecture			
	Seminar Lab course	4 (56 h)	6	
Self studies	protocols preparation of the talk 124 hours learning for the exam			
Module representative	Dr. rer. nat. Tilman Achstetter, Professor for Industrial Microbiology, Bremen University of Applied Sciences			
Instructor	Dr. rer. nat. Tilman Achstetter, Professor for Industrial Microbiology, Bremen University of Applied Sciences			
Examiner	Dr. rer. nat. Tilman Achstetter, Professor for Industrial Microbiology, Bremen University of Applied Sciences			
Objectives	In depth understanding of the abilities and peculiarities of micro organisms, broad knowledge of the possibilities to use and modify them to the desired features. Adoption of methods and results from fundamental research with respect to industrial application of those micro organisms (GLP/GMP, safety, economical and social issues). Exercises based on primary (and secondary) literature will raise the understanding for scientific analysis and synthesis; they will increase social competence and enlarge the catalogue of methods.			
Content of teaching	Changes of metabolic capacities of micro organisms relevant to industry, based on genetic engineering, random mutagenesis and subsequent screening exemplified by industrial projects. Synthesis of research findings on one hand in microbiology / cell biology/ microbial physiology / biochemistry and on the other hand of the pharmaceutical, food and feed, and fine chemical industry, based essentially on original literature (patents, publications). The course will focus on selected examples of bio active compounds produced with the help of genetically modified micro organisms like steroids, secondary metabolites from plant origin, (glyco-) proteins.			
Educational objectives	Ability to understanding of possibilities and capacities but also development of a sense for constraints in the use micro organism in industrial production			
Evaluation of the learning progress	Discussions in seminar			
Assessment	Seminar presentation (100 %)			
Frequency	Each summer semester			
Usage in other degree programmes	Int Degree Course Industrial and Environmental Biology (ISTAB MSc), Bremen University of Applied Sciences			
Requirements	Successful attendance in the required modules			

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