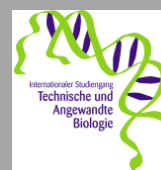


**International Degree Course
Industrial and Environmental Biology ISTAB (B.Sc.)
Hochschule Bremen – University of Applied Sciences**



**Study Program for Incoming Students
Winter term 2013/14 and Summer term 2014**

(Note: all dates to be confirmed)

Since five years ISTAB (Industrial Biology profile) welcomes guest students from abroad on a regular basis mostly from our partner universities. For these students a one semester's / one year's program has been put together which is conducted entirely in English. In the winter term the students will mix in with the ISTAB regulars doing advanced project work in the setting of the virtual company Tiger BioTec. In the summer term there is ample opportunity for scientific project work in the research labs of ISTAB.

Monday, Sept 16, 09:30 am, guest students and ISTAB students of the industrial biology/ biotechnology profile (in their seventh and last semester of ISTAB B.Sc.) coming back from their year abroad, and maybe some ISTAB M.Sc. students in their first semester will meet. They will be introduced to this year's subject they will be in charge of forming the R&D department of TiGer BioTec.

	Module	Exam	ECTS
Winter term 13 / 14	7.1 Project module I: TiGer BioTec	Presentation	6
	7.6 Lab Techniques	Oral exam	6
	7.2 Project module II: TiGer BioTec	Presentation	6
	1.3 Microbiology: (Lab course)	Lab report	6
	Project	Lab report	6

Summer term 14	4.2 Industr. Microbiology (Lab course)	Lab report	6
	4.4 Bioprocess Eng. Downstream Processing (Lab course)	Lab report (opt + tutoring)	6
	Project (Lab)	Report	6
	Project (Lab)	Report	6
	Project	Report	6

Note: 7.1 Project Module I: TiGer BioTec starts Sept 16, 2013, at 09:30 am, in the UB building, Neustadtswall 27, Room 310. Winter term will end likely Feb 7, 2014. Module 4.2 Industr. Microbiology (lab course, 4 days) starts March 17, 2014.

Please have a lab coat and safety goggles. They are an obligation to be worn during lab work.

Students will experience working conditions in applied research where they have

- to team up,
- to develop communication skills (highly formalized documentation like the development of an intranet communication platform, regular presentations - Powerpoint, team discussions),
- to do scientific background research (bibliography, patent research, contact to companies and research institutions etc.),
- to carry out a market analysis (again contact to companies and suppliers of primary matters and products, comparison of prices, consumer analysis etc.), and
- to set up a quality assurance/control unit responsible for the entire team (including implementation of GLP/GMP working conditions, assuring safety aspects (lab work in a safety zone respecting regulations of safe work in the lab, handling of potentially hazardous substances etc.), documentation, regular control of lab journals etc..

At the end of this first module (7.1 Project module I) students likely in groups of two will do a planning for roughly the coming three months (professional project managing tools including definition of working packages, milestones etc.) relying to the planning of the entire team. This market study including the planning will be graded (oral presentation).

The following module (Module 7.6 Lab techniques) will lead you to the lab where methods (micro-biology, (bio-) chemistry incl. enzymology, methods of product conservation and analysis) relating to your tasks will be established (or existing methods will be adapted), validated, and documented in a way which is generally binding for the team. This module will last for about three weeks and it will end with an oral examination based on the lab work and individual lab journals.

In the third module (7.2 Project module II) lasting from about the beginning of Nov till before Xmas you (and your colleague) will apply the methods which were developed and validated in the previous module. Results from your work (in the context of the entire team's work) will then allow the establishment of what is called a feasibility study. A final presentation (PowerPoint) of your work and the work of the entire team will then be graded.

During the entire period regular presentations (PowerPoint, once per week) will take place. You will have time for the German language courses, trips organized by ERASMUS etc. as you will follow (with your team colleague) your own schedule.

In addition a number of activities (like guest seminars, compact courses of guest colleagues, visits to science fairs etc) will be organized.

There will be a Xmas break likely from Saturday, Dec 21 till (likely) Sunday, Jan 5, 2013. During Jan you (and the other guest students) will have the option to participate in the **lab course of the microbiology module (1.3 Introduction to Microbiology)** which will take place in the period from Monday, Jan 13 till Thursday, Jan 23. In this period you will also write a concluding report on modules 7.1, 7.6, and 7.2, which will be graded. ISTAB regulars will write their bachelor thesis during this time.

Friday, Feb 7 (date to be confirmed), our ISTAB Board of Advisors (Biotechnology) will meet here in Bremen. We will have a scientific symposium where you and the entire team will present results of your work in modules 7.1, 7.6, and 7.2. For the ISTAB regulars this will be the defense of their Bachelor Thesis.

There will be a break between semesters from Monday, Feb 10, till Sunday, Mar 16.

Summer term will start for you Monday, Mar 17 with module 4.2 (Industrial Microbiology, one week theory, in German), during the following two weeks four days of **lab course (Introduction to Molecular Biology, in English)**. Your report on the lab work will be graded. The following module 4.4 (**Bioprocess engineering - Downstream Processes (Gerd Klöck), starting Monday, Apr 15**) will introduce you to topics of protein purification and characterization. For explanations and details see with Gerd Klöck. Also this lab course will terminate with a report which will be graded.

There is an Easter break (Saturday, April 14 til Sunday, April 27, 2014).

During the entire summer term starting as early as Feb 10, 2014 and not later than March 3, 2014 you will conduct **project work** in one of the ISTAB labs (valuing two modules, with graded reports) which would introduce you to scientific work in the field of yeast molecular biology or to projects implicating micro algae. You would contribute to ongoing research. There is ample time to discuss this point.

You will earn ECTS points in your language classes as well.