Bachelor+ A Year Abroad
with NIDI-INTERNATIONAL

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Abstract Goal of the NIDI-INTERNATIONAL project is to redesign and implement an existing program in order to integrate one year of study abroad for students. In this article we outline the design, implementation the BSc course of “Natural Sciences in the Information Society” that started in the winter term of 2007/08. We also describe a prototypic student project in the framework of the LiLa project that has to be implemented in the second semester abroad.

Key words: Bologna, Study Abroad Programme, New Media in Education, Remote Experiments, Virtual Laboratories

1 Background and Motivation

The BSc-program “NATURAL SCIENCES IN THE INFORMATION SOCIETY” (NIDI) [JNP+07] at Technische Universität Berlin (TUB) addresses students who are seeking a comprehensive natural scientific education. Their field of activity consists amongst other things of the areas of management of natural-scientific or engineering projects in an international context.

Goal of the NIDI-INTERNATIONAL project is to integrate in the curriculum a one year stay abroad for as many students as possible. In the medium term the year abroad shall be integrated for all students in the regular period of study of eight semesters to augment their professional qualification.
In the context of the DAAD-programme “DIES”\(^1\) the School of Mathematics and Natural Sciences at TUB is currently already cooperating with Escuela Politécnica Nacional (EPN) in Quito, Ecuador on a for your project “Strategic Faculty Management”. Within the framework of the “Erasmus Mundus External Cooperation Window Lot 3/4” TUB has been cooperating with Princess Sumaya University for Technology (PSUT) in Amman, Jordan since four years.

The BSc programme “Natural Sciences in the Information Society” was developed in the context of the study reform project GALILEA and introduced in the winter term 2007/8. Goal of the GALILEA project is to raise the attractiveness of natural-scientific and engineering programs. To this end exemplary programs are developed that shall particularly attract women. In the winter semester 2009/10 the program had 72 students of which 35 were women.

Currently the BSc of “Natural Sciences in the Information Society” is a six semester program. Course achievements can also be made abroad. However, the involved structural challenges, e.g. accreditation negotiations make such a venture very complicated for the individual student.

Thus, the goal of the NIDI-INTERNATIONAL project during the first two years is to create a framework that makes it feasible for students to combine an extended stay abroad with the acquisition of additional qualifications. The students delve into their partner universities and acquire international competencies and cultural insights during their vocational preparation. All study achievements from abroad are accredited via learning agreements. At the same time the “NATURAL SCIENCES IN THE INFORMATION SOCIETY” program is revised to a eight semester program integrating one year of studies abroad.

2 Goal

The BSc program “Natural Sciences in the Information Society” addresses students that are interested in natural sciences and engineering, yet would decide against the traditional programs. Particularly women shall be inspired by this program for natural sciences and engineering; economy as well as society have a growing demand for multi-disciplinary qualified graduates that have a comprehensive scientific knowledge. This multi-disciplinary is application- and research-oriented. Methods and basics from computer science, mathematics and natural sciences are put across.

The combination of these subjects is completed by choices from other natural scientific/technical and non-technical disciplines and forms the basis for the development of a comprehensive natural scientific methodological expertise. During their undergraduate studies the students acquire natural scientific basic knowledge and acquaint themselves with general and subject-specific problem solving methods in natural sciences. These competencies facilitate the transition to professional life and prepare as well for the commencement of graduate studies.

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\(^1\) Dialogue on Innovative Higher Education Strategies