



Technische
Universität
Braunschweig



EXCELLENCE CENTER FOR
DEVELOPMENT COOPERATION
SUSTAINABLE WATER MANAGEMENT

Internet: www.exceed.tu-braunschweig.de
Email: exceed@tu-braunschweig.de

Content: **TU Braunschweig**
Dr. Marit Kolb
Institute of Environmental and Sustainable Chemistry
Email: m.kolb@tu-bs.de
Bahir Dar University
Mr. Essayas Kaba
Institute of Technology
Email: ekk45@cornell.edu

Venue: Bahir Dar University
Mr. Essayas Kaba
Institute of Technology
P.O. Box 26, Bahir Dar
Ethiopia
Email: ekk45@cornell.edu
Tel: +251 582 20 01 13

Organization: TU Braunschweig
Dr. Heike Dieckmann
Scientific Coordinator
Excellence Center for Development Cooperation
Sustainable Water Management
Beethovenstraße 51a
D-38106 Braunschweig
Germany
Email: h.dieckmann@tu-bs.de
Tel.: +49 531 391-3935



Regional Training Course on Basic Water Quality Testing

April 16 – 21, 2012 / Bahir Dar, Ethiopia



Photo: Turbidimeter Use at Bahir Dar University (2009). © Essayas Kaba

Regional Training Course on Basic Water Quality Testing

Overview

The training course aims to increase the understanding of basic water quality testing methods and procedures.

The course will cover basic but important concepts in water quality testing including sampling techniques, basic water quality analyses, application of water quality measurements in environmental monitoring, guidelines, legislative regulations and low technology systems for water treatment.

Every topic will be introduced by a theoretical part and deepened by a practical training on site and in the laboratory.

Participants will be required to present their respective countries legislative environment regarding to the water quality monitoring issues and problems related to water quality monitoring.

Objectives

- Getting knowledge, understanding and awareness on physical, chemical and biological parameters of water quality and on the standards and legal framework of water quality monitoring
- Improving skills on practical water quality testing including standard procedures for sampling, statistical evaluation and basic physical, chemical and microbial analyses, which can also be performed with relatively

low instrumental equipment

- Getting knowledge about the treatment of surface water with low cost equipment

Topics

- Sampling techniques
- Statistical methods for data evaluation
- Basic water quality parameters
- Importance and analyses of nutrients and chlorophyll a in water
- Spectrophotometry for chemical parameters (selected heavy metals, anions and pesticides, with practical training) compared with high sophisticated analytical methods (without practical training)
- Microbial evaluation of water quality
- Guidelines and legislative regulations about water quality (presentations by participants and trainers)
- Evaluation of data from the practical training in the context of guidelines by the participants
- Low technology systems for the treatment of surface water (presentation and discussion)

Course Organization

The training course consists of theoretical lectures, practical laboratory trainings, discussions and field data collection at Lake Tana and Blue Nile; excursion to the Blue Nile Falls.

Schedule		
Monday	04/16/2012	Arrival and come together
Tuesday	04/17/2012	Opening ceremony; Sampling techniques; Demonstration of sampling equipments; Precautionary measures for sampling containers; Sampling strategy and statistical methods; Field measurements (Secchi disk, conductivity, pH, oxygen content); Sampling and field data collection at Lake Tana and Blue Nile River
Wednesday	04/18/2012	Turbidity, total suspended solids (TSS) and correlations to pH and conductivity using a case study of Lake Tana; Nutrients and chlorophyll a; Laboratory session on determination of turbidity, TSS (gravimetric and filtration method), nutrients (N and P) and chlorophyll
Thursday	04/19/2012	Spectrophotometry for chemical parameters (heavy metals, anions pesticides) in comparison with high sophisticated methods (GC, HPLC, GC/MS, ICP OES); Laboratory session with spectrophotometer measuring chemical parameters
Friday	04/20/2012	Microbial evaluation of water quality; Practical training on microbial parameters.
Saturday	04/21/2012	Low technology systems for treatment of surface water; Guidelines and legislative regulations about water quality (Europe and Germany); Presentations by participants about the situation in their Country; Data evaluation using the data collected during the training; Excursion to Blue Nile Falls; Closing ceremony
Sunday	04/22/2012	Departure

Lecturers

Prof. Dr. N. Dichtl, Dr. Marit Kolb, (Technische Universität Braunschweig, Germany)
 Mr. Essayas Kaba, Mr. Goraw Goshu, (Bahir Dar University, Ethiopia)
 requested: Dr. Zeinab Shaaban Abu-Elnaga (Mansoura University, Egypt)

Target Audience

The course is addressed to Sub-Saharan

African graduate and Ph.D students from engineering and natural sciences departments interested in acquiring knowledge and practical experiences in basic water quality testing.

Number of participants

The number of participants is confined to 20.

Application

Please apply online until February 25, 2012: