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Winter School in Water Quality and Testing

April 2 - April 8, 2011

funded by

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Winter School in Water Quality and Testing

Overview
The winter school is a professional training course designed for capacity building in the fields of water quality (WQ) and testing water parameters. The course will cover the principles of instrumental and chemical analyses related to water quality, analytical methods, validation and quality assurance in water analysis. It starts with principles of water quality and analysis then goes deeply into details of the sophisticated theoretical aspects and practical techniques used for water testing and monitoring parameters. In addition, this training program will improve skills on water quality testing and data evaluation, how to apply them in the short and long-term water monitoring activities at decision-making and field levels according to national and international water guidelines.

Objectives
- To get knowledge, understanding and awareness on physical, chemical and biological parameters of water quality; standards and legal framework of water quality monitoring.
- Improving skills on water quality testing including periodicity and standard procedures for sampling, testing and analysis.
- Practical experience and capacity building for implementation of water quality testing scheme.

Topics
- Principles of instrumental analysis and quality assurance in chemical analysis focused on accuracy and precision. Design of a water quality monitoring system.
- Interpretation of water quality variables - physical and chemical parameters.
- Environmental legislations at Aqaba Special Economic Zone Authority (ASEZA) & Gulf of Aqaba.
- Water quality in Jordan and main challenges.
- Biological analysis of water, wastewater and seawater.
- Water pollution and monitoring of organic and inorganic pollutants.
- Relevant guidelines for drinking water quality, establishing national drinking water standards in Jordan.
- Water resources and management.
- Seasonal variation of meso-zooplankton in the Gulf of Aqaba.
- Effect of coastal constructions and human activities on coral reefs of Gulf of Aqaba.

Course Organization
The winter school consists of theoretical lectures, practical laboratories training, discussion and assignment sessions, excursion to industrial complex & Aqaba Marine Science Station. Additionally, a workshop for students and academic staff will be performed to exchange knowledge and experience.
## Lecturers
Associate Prof. Dr. Mufeed Batarseh, Ass. Prof. Dr. Wael Al-Zereini (Prince Faisal Center for Dead Sea, Environmental and Energy Research/Mutah University); Dr. Aiman Solieman, Eng. Wael Sulieman (BEN HAYYAN–Aqaba International Laboratories at ASEZA); Prof. Dr. Mahmoud Al-awi (Chemistry Department, University of Jordan); Prof. Dr. Anwar Jiries, Prof. Dr. Tayel El Hasian (Faculty of Sciences/Mutah University) Associate Prof. Dr. Tariq Al Najjar, Associate Prof. Dr. Foad Al-Horani (University of Jordan/ Aqaba Marine Science station).

## Target Audience
PhD and master students, post-doctoral researchers, senior research scientists and engineers with an environmental science background interested in acquiring competence in water quality monitoring.

## Number of participants
The number of participants is confined to 20.

## Application
Please apply online until 11th February 2011: http://www.exceed.tu-braunschweig.de/apply/summerschool

## Schedule

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Activities</th>
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<tbody>
<tr>
<td>Saturday</td>
<td>4/2/2011</td>
<td>Arrival and come together</td>
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<tr>
<td>Sunday</td>
<td>4/3/2011</td>
<td>Opening Ceremony; Principles of instrumental analysis &amp; quality assurance in chemical analysis; Interpretation of WQ variables; Environmental legislations at ASEZA &amp; Gulf of Aqaba; Water quality in Jordan &amp; main challenges</td>
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<tr>
<td>Monday</td>
<td>4/4/2011</td>
<td>Chromatographic methods in chemical water analysis; Biological analysis of Water; Practical session (GC-MS, GC-ECD and HPLC) on water sampling &amp; testing; Water pollution &amp; monitoring of organic pollutants; Visit to Marine Science Station in Aqaba</td>
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<td>Tuesday</td>
<td>4/5/2011</td>
<td>Trip to Mutah University; Topic oriented Workshop</td>
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<tr>
<td>Wednesday</td>
<td>4/6/2011</td>
<td>Water sampling &amp; testing; Water pollution &amp; monitoring of inorganic water parameters; Monitoring sources' effects &amp; point-sources-programs; Guidelines for drinking water quality, national drinking water standards in Jordan; Quality control &amp; assurance aspects in WQ control laboratories; Seasonal variation of meso-zooplankton in the Gulf of Aqaba; Effect of costal constructions &amp; human activities on coral refs</td>
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<td>Thursday</td>
<td>4/7/2011</td>
<td>Excursion to industrial complex in Aqaba – challenges of WQ monitoring &amp; compliance</td>
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<td>Friday</td>
<td>4/8/2011</td>
<td>Excursion</td>
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<tr>
<td>Saturday</td>
<td>4/9/2011</td>
<td>Departure</td>
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