

CIS Intensive Training Program: Building Materials & Hydraulic Engineering

SUMMER COURSE 2016 (August 08 - 22)

The **CIS Intensive Training Program** aims at supporting scientists from all departments of Iraqi universities in integrating modern technologies and methods in their teaching and research practices, improving their intercultural communication skills and giving them the opportunity for scientific exchange and networking with their German colleagues. Iraqi Universities are welcome to ask the CIS to design special courses according to their demands. The Summer Course 2016 on Building Materials & Hydraulic Engineering is such a course customized according to the needs of the Department of Civil Engineering, College of Engineering of the University of Qadisiya, one of the partner universities of the CIS.

Program Schedule

First Week / August 08 - 15

August 08, Monday

09:20	Departure at the Baghdad International Airport by Iraqi Airways
14:00	Arrival at the Frankfurt/Main International Airport
15:00	Bus transfer from Frankfurt/Main International Airport to hotels in Erlangen
19:00	Welcome Dinner

August 09, Tuesday

- 08:30 Departure to Pleinfeld
- 10:00 - 12:00 **Visit and Guided Tour of the Barrier Lake and Hydro-Electric Power Plant "Brombachsee"**
Dipl.-Ing. Thomas Liepold, Engineer in Charge
(http://cis.uni-erlangen.org/relaunch/wp-content/uploads/2015/10/ueberleitung-fb_engl.pdf)
- 12:30 Lunch at the Brombachsee
- 14:00 Boat Trip on the river Altmühl
- 16:00 Departure to Erlangen

August 10, Wednesday**Workshop on Lab Testing, Software Application and Field Application**

This workshop gives an overview on Ohm University's current research projects and methods such as the application of different software in the fields of Water Engineering, Construction Engineering and Material Science.

Georg Simon Ohm University of Applied Sciences

Faculty of Civil Engineering

(<http://www.th-nuernberg.eu/home/departments/20/page.html>)

Venue: Keßlerplatz 12, 90489 Nuremberg,

*Meeting point: **Room KB.010***

- 09:00 – 10:00 **Reception by Prof. Dr.-Ing. Thomas Freimann, Dean**
Workshop on Lab Testing, Software Application and Field Application
- 10:00 – 11:45 **Part 1: Water Engineering** (www.hydroohm.de)
Physical model tests (overflow spillway, stilling basin, materials and scale factors, teaching experiments, etc.)
Computational Fluid Dynamics - Models, Software systems, Examples (2D & 3D, SMS, OpenFOAM, STAR-CCM+)
(M.Eng. Heß, M.Eng. Schneefeld)
- 11:45 – 12:15 Coffee/Tea break
- 12:15 – 13:30 **Part 2: Construction Engineering** (www.konstruohm.de)
3D printing and 3D scanning
Speech: Building Information Modelling (BIM)
Speech: Waveguide Finite Element Method for pre-stressed Structures
(M.Eng. Strobl)
- 13:30 Lunch
- 15:00 – 17:00 Guided tour of the old town of Nürnberg

August 11, Thursday**Workshop on Lab Testing, Software Application and Field Application**

- 9:00 – 10:30 **Part 3: Material Science** (www.baustoffohm.de)
 Typical Lab software and control systems of pressure tests, tensile and flexural strength tests; thermographic measurement methods;
 Organisation of student lectures in lab;
 (Prof. Dr. Thomas Freimann, Dipl.-Ing. Thomas Killing)
- 10:30 – 10:45 Coffee/Tea break
- 10:45 – 12:30 **Part 4: Material Science** (www.baustoffohm.de)
 Actual research themes: wood light weight concrete; concrete bonded membranes for waterproof constructions; active thermographic measurement for moisture detection
 (Prof. Dr. Thomas Freimann, Dipl.-Ing. Thomas Killing)
- 12:30 Lunch
- 14:00 – 16:00 Water Authority Nuremberg
 Bavarian State Ministry of the Environment and Consumer Protection
 (The Water Authority Nuremberg is the governmental institution responsible for the monitoring of waste water management, soil protection, groundwater management, water supply, flood protection and adaption to climate change in the field of water management)
<http://www.wwa-n.bayern.de/index.htm>
<http://www.stmuv.bayern.de/english/index.htm>)
 Venue: Autobahndirektion Nordbayern, Flaschenhofstraße 55, 90489 Nuremberg (t.b.c.)

August 12, Friday

- 08:30 Train Transfer to Iphofen
- 10:00 – 14:00 Visit of Knauf Academy and Knauf Raw Material Production Site
 Venue: Knauf Gips KG, Am Bahnhof 7, 97346 Iphofen
<http://www.knauf.de/> (t.b.c.)

Second Week / August 15 - 22August 15, Monday

- All day **Excursion by bus to the Technical University Munich (TUM)**
Faculty of Civil, Geo and Environmental Engineering
Visit of Chairs, Lectures, Laboratories, and Testing Plants
<http://www.bgu.tum.de/en/home/> (optional, t.b.c.)

August 16, Tuesday

- All day Excursion by bus to the **Wastewater Treatment Plant Freising**
 (site visit, presentation, discussion)
 Venue: *Parkstraße 24, 85356 Freising*
- Visit of the Oberrach Hydraulic Laboratory for large scale flow investigations

PD Dr.Eng. Arnd Hartlieb

Venue: *Obernach, 82432 Walchensee*

(<http://www.wb.bgu.tum.de/en/versuchsanstalt-obernach/obernach-infrastruktur/>) (<http://www.wb.bgu.tum.de/en/welcome/>)

Visit of the Hydroelectric Power Station Walchensee

(site visit, presentation, discussion)

Venue: *Altjoch 21, 82431 Kochel am See*

(http://apps.eon.com/documents/EWK_Walchensee_2010_e_eng.pdf)

(optional, t.b.c.)

August 17, Wednesday - August 18, Thursday

Two days excursion to the Faculty of Architecture, Civil Engineering and Environmental Sciences, Technische Universität Braunschweig

(<https://www.tu-braunschweig.de/abu/index.html>)

(optional, t.b.c.)

August 19, Friday

10:00 – 12:00

Visit of the Documentation Centre Nazi Party Rally Grounds, Nuremberg

(<http://www.museums.nuremberg.de/documentation-centre/index.html>)

14:00 – 16:00

Guided tour of the DB Museum (Railway Museum) Nürnberg

(https://www.dbmuseum.de/museum_en/home_en/)

August 20, Saturday – August 21, Sunday

Free time at the disposal of the trainees

August 22, Monday

10:00

Bus transfer from hotels to the Frankfurt/Main Int. Airport

15:45

Departure from Frankfurt/Main Int. Airport by Iraqi Airways