

CIS Intensive Training Program: Civil & Environmental Engineering

SPRING COURSE 2016 (April 03 - 15)

The *Center for Iraq Studies* (CIS) is organizing an Intensive Course which is open to Civil and Environmental Engineers from all Iraqi Universities. The aim of this Intensive Course is to support engineers from Iraqi universities in enhancing their knowledge in the fields of Lab Testing, Software Application and Field Application as well as giving them the opportunity to discuss issues of research and teaching with German scientists.

The program begins with a workshop organized by *Georg Simon Ohm University of Applied Sciences* on lab testing, software application and field application showing the Ohm University's newest research methods and projects as well as their application in cooperation with private companies and public institutions. The second part of the course comprises visits to the chairs and laboratories of the Faculty of Civil, Geo and Environmental Engineering of the *Technical University of Munich* (TUM) according to the specialisation of the trainees, including seminars on TUM's current research projects. The third part is a course on the application of General Purpose Finite Element Software in the field of Civil Engineering.

Program Schedule

First Week / April 03 - 08

April 03, Sunday

All day

Arrival of the Trainees

April 04, Monday

10:00-12:00

Registration

14:00

Friedrich-Alexander-University as a leading German university

Reception and Presentation

Dr. Natalia Jörg, Central Office for International Affairs

15:00

Presentation of the Center for Iraq Studies (CIS)**Prof. Dr. Dr. Şefik Alp Bahadır***Venue: Kochstr.6a , 91054 Erlangen, Room 0.014 PSG*April 05, Tuesday**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, Environmental Engineering, Construction Engineering, Geotechnical Engineering and Surveying methods. It also includes visits of private companies showing actual production processes.

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, Room KB 010*

10:00 – 10:30

Reception by Prof. Dr.Eng. Thomas Freimann, Dean**Workshop on Lab Testing, Software Application and Field Application**

10:30 – 13:00

– Part 1: Construction Engineering (www.konstruohm.de)

Workshop: 3D printing and 3D scanning;

Seminars on Building Information Modelling (BIM) and Waveguide Finite Element Method for pre-stressed Structures

Instructor: Prof. Dr. Rieger, Strobl, M.Eng.

14:00 – 16:00

– Part 2: 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+)

Instructor: Prof. Dr.Eng. habil. Carstensen, Dipl.-Ing. Vollweiler, Heß, M.Eng., Schneefeld, M.Eng.

April 06, Wednesday**Workshop on Lab Testing, Software Application and Field Application**

10:00 – 12:00

– Part 3: Geotechnical Engineering

Teaching content of geotechnical engineering in construction; Compression tests of rocks; Typical geotechnical software like PLAXIS; Actual research themes

Instructor: Prof. Dr. Plaßmann, Dipl.-Ing. Volkmer

12:00 – 13:30

– Part 4: Environmental Engineering (www.siwaohm.de)

Lecture on wastewater monitoring – COD – NH4 – NO3 - Sludge Volume Index – Activated sludge characterization through microscopy

Instructor: Prof. Krick, Völkert, M.Eng.

14:00 – 18:30

– Part 5: Water Management in Northern Bavaria

Excursion/field trip: guided tour at a canal lock near the city of Hiltpoltstein

Instructor: Prof. Krick

18:30

Welcome Dinner

Hayat's Restaurant (Moroccan Cuisine)

Venue: Prinzregentenufer 3, 90489 Nuremberg

April 07, Thursday

- Workshop on Lab Testing, Software Application and Field Application**
- 10:00 – 12:00 – **Part 6: Material Science** (www.baustoffohm.de)
Typical Lab software and control systems of pressure tests, tensile and flexural strength tests; thermografic measurements; Actual research themes
Instructor: Prof. Dr. Freimann, Dipl.-Ing. Killing
- 12:00 – 13:00 – **Part 7: Surveying and Remote Sensing**
Applications of 3D laser scanning in Civil Engineering and Architecture
Instructor: Prof. Best, HWM Faltermeier
- 13:30 – 17:00 – **Part 8: Visit of 'KLEBL' precast concrete construction plant**
Excursion/field trip: company visit, ceilings, binders and structure parts for factory buildings (www.klebl.de)
Instructor: Prof. Dr.Eng. Thomas Freimann

April 08, Friday

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

Second Week / April 11 - 15April 11, Monday

- 08:30 *Bus Transfer to Munich*
Technical University Munich (TUM)
Faculty of Civil, Geo and Environmental Engineering
Visit of Chairs, Lectures, Laboratories, and Testing Plants
This workshop includes visits of laboratories and testing plants of the Faculty of Civil, Geo and Environmental Engineering of Technical University of Munich (TUM) according to the specialization of the participants showing TUM's current and unique research projects.
Instructor: Dipl.-Ing. Benedikt Philipp, Chair for Statics
(<http://www.bgu.tum.de/en/home/>)
- 11:00 – 12:30 **Wastewater Treatment Plant Freising**
(site visit, presentation, discussion)
Gabriele Weinberger, Director
Venue: Parkstraße 24, 85356 Freising
- 13:00 – 14:15 Lunch at the Mensa of the Max-Planck-Institut for Plasma Physics,
Boltzmannstr. 2, 85748 Munich-Garching
- 15:00 – 17:00 **Chair and Testing Centre for foundation engineering, soil mechanics and rock mechanics**
Dr.Eng. Gerhard Bräu
(Visit of Laboratories, Presentation, Discussion)
Venue: Baumbachstr. 7, 81245 Munich
- 17:00 *Bus Transfer to Kochel am See*
- 18:00 Hotel Check In, Gasthof Hotel zur Post
(<http://www.posthotel-kochel.de/lage-und-umgebung/>)

April 12, Tuesday

- 09:00 *Bus Transfer to Munich*
Technical University Munich (TUM)
Faculty of Civil, Geo and Environmental Engineering

Visit of Chairs, Lectures, Laboratories, and Testing Plants – Part 2

(<http://www.bgu.tum.de/en/home/>)

Venue: Arcisstr. 21, 80333 Munich

10:30 – 11:15

Chair of Structural Mechanics

Visit of the laboratories for vibroacoustics and structural dynamics

Dr.Eng. Martin Buchschmid, Deputy Head of Department

(<https://www.bm.bgu.tum.de/en/research/>)

11:15 – 12:00

Chair of Hydromechanics

(Visit of Laboratory, Presentation, Discussion)

Dr.Eng. Daniel Quosdorf, Head of the Laboratory

(<https://www.hy.bgu.tum.de/index.php?id=5&L=1>)

12:00 – 13:45

Lunch break in a Pakistan Restaurant close to the TUM

13:45 – 15:00

Leonhard Obermeyer Center

The Leonhard Obermeyer Center bundles the exceptionally broad scientific expertise in the field of digital methods for the built environment present at TU Munich, ranging from Numerical Methods, across Building Information Modeling, Geospatial Information Modeling, Computer-Aided Architectural Design to Remote Sensing and Point-cloud Processing.

(Visit of Laboratories, Presentation, Discussion)

Dr.Eng. Stefan Kaufmann

(<https://www.loc.tum.de/>)

15:00 – 15:15

Chair for Timber Structures and Building Construction

(Visit of Laboratory, Presentation, Discussion)

Michael Schulte-Wrede, M.Sc.

(<https://www.hb.bgu.tum.de/index.php?id=5&L=1>)

15:15 – 16:15

Chair of Hydraulic and Water Resources Engineering

Dieter Thoma Laboratory

(Visit of Laboratory, Presentation, Discussion)

Dr.Eng. Wilfried Knapp, Head of Laboratory

(<http://www.wb.bgu.tum.de/en/welcome/>)

16:30 – 17:00

Reception by the Vice President for Academic and Student Affairs (tbc)

Prof. Dr.Eng. Gerhard Müller

(<http://www.tum.de/en/about-tum/our-university/tum-board-of-management/>)

17:00

Bus Transfer to Kochel am See

April 13, Wednesday

Technical University Munich (TUM)

Faculty of Civil, Geo and Environmental Engineering

Visit of Chairs, Lectures, Laboratories, and Testing Plants – Part 3

(<http://www.bgu.tum.de/en/home/>)

10:00 – 12:00

Chair of Hydraulic and Water Resources Engineering

Obernach Research Institute

Visit of the Obernach 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/>)

14:30 – 16:30

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)

16:00

Bus Transfer to Erlangen

April 14, Thursday

12:30 – 15:30

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

Presentation and Discussion

Stefan Bertelmann, Head, Department for Hydraulic Construction and Watercourse Development

<http://www.wwa-n.bayern.de/index.htm>

<http://www.stmuv.bayern.de/english/index.htm>

Venue: Autobahndirektion Nordbayern, Flaschenhofstraße 55, 90489 Nuremberg, Sitzungssaal 2.64

April 15, Friday

10:00 – 16:00

Course on General Purpose Finite Element Software

Instructor: Alexander Nolte, M.Eng., CADFEM GmbH (<http://www.cadfem.de/>)

Venue: Konrad-Zuse-Str. 3, 91054 Erlangen, Room 03.018

April 16, Saturday

All Day

Departure of the Trainees

Dropbox for course material:

<https://www.dropbox.com/sh/335zgx29jttj662/FKbKPs7Pqt>