



**Fraunhofer**  
IOSB

# DAAD Serial Summer School 2013



**Sustainable Water Management  
(NaWaM)**

## **PROGRAMME**

System Solutions to Integrated  
Water Resources Management

**16th - 27th September 2013**

**Ilmenau**



TECHNISCHE UNIVERSITÄT  
ILMENAU

## SUBJECT

### **Sustainable Water Management (NaWaM): Funding for Serial Summer Schools in Germany**

| Title: System Solutions to Integrated Water Resources Management

| By financial support of the German Academic Exchange Service (DAAD) Fraunhofer Application Center Ilmenau, Ilmenau University of Technology and German Water Partnership/ Country section Central Asia, obtained the opportunity to organize an International Serial Summer School in years 2012, 2013 and 2014 in Germany.

| Joining the 2nd serial summer school, you have the opportunity to gain advanced knowledge about the integrated management of water-energy systems with systematic methods by one-week lectures, tutorials and working in project groups, followed by several visits to water reservoirs (including a pumped-storaged power plant), drinking water production, treatment and supply systems, and waste water treatment plants.

| The Language will be English.

# PROGRAMME

## Monday, 16 September 2013

| **08:30**

**Pick up** | Hotel MARA  
*by Miss Ehlert*

| **09:00 - 10:30** | Meitner Building

### **Welcome**

Organizational Procedure, Introduction of Participants,  
Explanation of the 3 year Serial Summer School  
*by Dr. Scharaw, Dr. Hopfgarten, Dr. March*

| **11:00 - 12:30** | Meitner Building

### **Project description**

Research and Projects at Fraunhofer AST, Education and  
Research at TU Ilmenau  
Explanation of „German Water Partnership“  
*by Dr. Scharaw/Fraunhofer AST, Dr. Hopfgarten/TU Ilmenau*

| **12:30 - 14:00** | Meitner Building/TU Ilmenau Refectory

### **Reimbursement of travel costs/Lunch**

In two groups

| **14:00 - 15:30** | Meitner Building

### **Discussion**

Discussion and Agreement about Contribution of  
Participants  
*by Dr. Scharaw/Fraunhofer AST*

| **16:00 - 17:30**

### **Tour**

Around the Campus and the City  
*by Dr. Hopfgarten/TU Ilmenau*

| **19:00 - 20:00** | Hotel MARA

### **Dinner/BBQ**

*by Miss Ehlert*

# PROGRAMME

## Tuesday, 17 September 2013

| **07:30** | Hotel MARA

### **Departure**

*by Miss Ehlert*

| **10:30 - 13:00** | Penig, Saxonia

### **Excursion**

to Bergmann Clean Abwassertechnik GmbH  
(Production, Realization, and Supervision of full-  
biological Waste Water Technologies for Households,  
Municipalities, Enterprises)

*by M.Sc.Hydrol. Watson/Fraunhofer AST*

| **13:00 - 14:00** | Hotel/Restaurant Zur Lochmühle

### **Lunch**

| **14:00 - 15:00**

### **Excursion Part 2**

| **15:00 - 17:00**

### **Return to Hotel MARA**

| **19:00 - 20:00** | Hotel MARA

### **Dinner**

# PROGRAMME

## Wednesday, 18 September 2013

| **09:00 - 10:30** | Arrhenius Building Conference Room

### **Lecture**

Sustainable Groundwater Management

*by M.Sc.Hydrol. Watson/Fraunhofer AST*

| **11:00 - 12:30** | Arrhenius Building Conference Room

### **Participant's Contributions**

Max. 4 Contributions with Discussion

*Moderation: M.Sc.Hydrol. Watson/Fraunhofer AST*

| **12:30 - 14:00** | TU Ilmenau Refectory

### **Lunch**

| **14:00 - 15:30** | Arrhenius Building Conference Room

### **Lecture**

Simulation of Dynamic Systems - Methods and Tools  
(Systems engineering fundamentals 1)

*by Dr. Hopfgarten/TU Ilmenau*

| **16:00 - 17:30** | Arrhenius Building Conference Room

### **Lecture**

Flood Water Management, Data Acquisition and  
Monitoring of Reservoirs

*by Dipl.-Ing. Westerhoff/Fraunhofer AST*

| **19:00 - 20:00** | Hotel MARA

### **Dinner**

# PROGRAMME

## Thursday, 19 September 2013

| **08:30** | Hotel MARA

### **Pick up**

*by Miss Ehlert*

| **09:00 - 10:30** | Fraunhofer AST Conference Room

### **Lecture**

Introduction to Fraunhofer Application Center Systems Engineering

*by M.Sc.Hydrol. Watson/Fraunhofer AST*

| **11:00 - 12:30** | Fraunhofer AST Conference Room

### **Lecture**

Introduction to Fraunhofer Application Center Systems Engineering

*by M.Sc.Hydrol. Watson/Fraunhofer AST*

### **Walk to TU Ilmenau Refectory**

*by M.Sc.Hydrol. Watson/Fraunhofer AST*

| **12:30 - 14:00** | TU Ilmenau Refectory

### **Lunch**

| **14:00 - 15:30** | Humboldt Building Sr 117

### **Lecture**

Decision Support for Management of Water/Water-Energy Systems (Systems engineering fundamentals 2)

*by Prof. Puta/TU Ilmenau*

| **16:00 - 17:30** | Humboldt Building Sr 117

### **Participant's Contributions**

Max. 4 Contributions with Discussion

*Moderation: Prof. Puta/TU Ilmenau*

| **19:00 - 20:00** | Hotel MARA

### **Dinner**

# PROGRAMME

## Friday, 20 September 2013

| **08:00** | Hotel MARA

### **Departure**

*by Dr. Hopfgarten/TU Ilmenau*

| **10:00 - 12:00** | Jena, Thuringia

### **Excursion**

Waste Water Treatment Plant

| **12:30 - 14:00** | Restauration Stilbruch

### **Lunch**

| **14:00 - 17:00** | Jena, Thuringia

### **Freetime**

| **17:00 - 19:00**

### **Return to Hotel MARA**

| **19:30 - 20:30** | Hotel MARA

### **Dinner**

# PROGRAMME

**Saturday, 21 September 2013**  
**Sunday, 22 September 2013**

| **09:30** | Hotel MARA

## **Departure**

| **11:30 - 13:00** | Residenzkeller Eisenach

## **Lunch**

*by M.Sc.Hydrol. Watson/Fraunhofer AST*

| **13:30 - 14:30** | Eisenach, Thuringia, Wartburg

## **Guided Tour**

| **15:00 - 17:00**

## **Return to Hotel MARA**

Alternative: Stay in Erfurt

| **19:30 - 20:30** | Hotel MARA

## **Dinner**

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| **08:00** | Hotel MARA

## **Departure**

*by Dr. Hopfgarten/TU Ilmenau*

| **11:00 - 13:00** | Dresden, Saxonia

## **„Historisches Grünes Gewölbe“**

| **13:30 - 15:00** | Max Dresden, Altstadt

## **Lunch**

| **15:00 - 17:00** | Dresden, Saxonia

## **Freetime**

| **17:00 - 19:30**

## **Return to Hotel MARA**

| **20:00 - 21:00** | Hotel MARA

## **Dinner**



# PROGRAMME

## Monday, 23 September 2013

| **09:00 - 10:30** | Meitner Building

### Lecture

Water-Energy Systems

*by Dr. Arnold/Universität Stuttgart*

| **11:00 - 12:30** | Meitner Building

### Lecture

Pilote Solution for Drinking Water Supply System of South Thuringia

*by Dr. Hopfgarten/TU Ilmenau*

| **12:30 - 14:00** | TU Ilmenau Refectory

### Lunch

| **14:00 - 15:30** | Meitner Building

### Lecture

Management of Wastewater Treatment Systems in Mongolia

*by Dipl.-Ing. Dietze/Fraunhofer AST*

| **16:00 - 17:30** | Meitner Building

### Participant's Contributions

Max. 4 Contributions with Discussion

*Moderation: Dr. Hopfgarten/TU Ilmenau*

| **19:00 - 20:00** | Hotel MARA

### Dinner

# PROGRAMME

## Tuesday, 24 September 2013

| **07:30** | Hotel MARA

### **Departure**

*by Dipl.-Ing. Westerhoff, Dipl.-Ing. Dietze/Fraunhofer AST*

| **10:00 - 12:45** | WILO SE, Werk Hof, Bavaria

### **Excursion**

Producer of Equipment for Water Supply, Wastewater Treatment Measurement and Control Devices

| **12:45 - 13:20**

### **Lunch**

| **14:00 - 17:00** | HEW, Hof, Bavaria

### **Excursion**

Hof Energie und Wasser; Municipality for Water and Energy Supply of Hof city

| **17:00 - 19:30**

### **Return to Hotel MARA**

| **20:00 - 21:00** | Hotel MARA

### **Dinner**

# PROGRAMME

## Wednesday, 25 September 2013

| **09:00 - 10:30** | Oeconomicum Building Sr 404

### Lecture

Optimization of Static and Dynamic Systems

*by Prof. Puta/TU Ilmenau*

| **11:00 - 12:30** | Oeconomicum Building Sr 404

### Lecture

Modelling, Simulation and Optimization of Water Distribution Systems

*by Mr. Duc-Dai Pham*

| **12:30 - 14:00** | TU Ilmenau Refectory

### Lunch

| **14:00 - 15:30** | Oeconomicum Building Sr 404

### Lecture

Modelling and Model-based Control of Wastewater Treatment Systems

*by Dr. Hopfgarten/TU Ilmenau*

| **19:00 - 20:00** | Hotel MARA

### Dinner

# PROGRAMME

## Thursday, 26 September 2013

| **07:30** | Hotel MARA

### **Departure**

*by Dr. Hopfgarten/TU Ilmenau*

| **08:30 - 11:00** | Leibis, Thuringia

### **Excursion**

„Leibis“ Drinking Water Reservoir  
(Dipl.-Biol. Willmitzer/Thüringer Fernwasser; at „Leibis reservoir“: presentation: Measurement data, monitoring, and water quality control in reservoirs and reservoir visit)

| **12:00 - 14:00** | Goldisthal, Thuringia

### **Excursion**

Pumped-storage Power Plant „Goldisthal“

| **14:15 - 15:30** | Gaststätte „Oberes Schwarzatal“

### **Lunch**

| **15:30 - 16:30**

### **Return to Hotel MARA**

| **19:00 - 20:00** | Hotel MARA

### **Dinner**

## PROGRAMME

**Friday, 27 September 2013**

**Saturday, 28 September 2013**

| **09:00 - 10:30** | Meitner Building

### **Lecture**

Final Discussion and Evaluation

*by Prof. Puta, Dr. Hopfgarten/TU Ilmenau*

| **11:00 - 12:30** | Meitner Building

### **Lecture**

Final Discussion and Evaluation

*by Prof. Puta, Dr. Hopfgarten/TU Ilmenau*

| **12:30 - 14:00** | TU Ilmenau Refectory

### **Lunch**

| **14:00 - 19:00**

### **Free Time**

| **19:00 - 20:00** | Hotel MARA

### **Dinner**

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| **until 11:00 a.m.**

### **Check-Out/Departure**

# CAMPUS PLAN





## CONTACT

### ADDRESS

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### IMPRESSUM

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For more information please see also:

<http://www.daad.de/hochschulen/ausschreibungen/18927.de.html>

[www.iosb-ast.fraunhofer.de](http://www.iosb-ast.fraunhofer.de)