



**TECHNISCHE  
UNIVERSITÄT  
DRESDEN**



# **TEMPUS Project EDUWAT**

## **“Development of a Modern Higher Education System for Water Engineering in Syria”**

### **- Resume -**

**4. Workshop at Czech University of Life Sciences in Prague  
26.-27.03.2012**

# **Reform of Higher Education through International University Cooperation**

## Development of Modern Higher Educations System for Water Engineers in Syria (EDUWAT)

### Objectives:

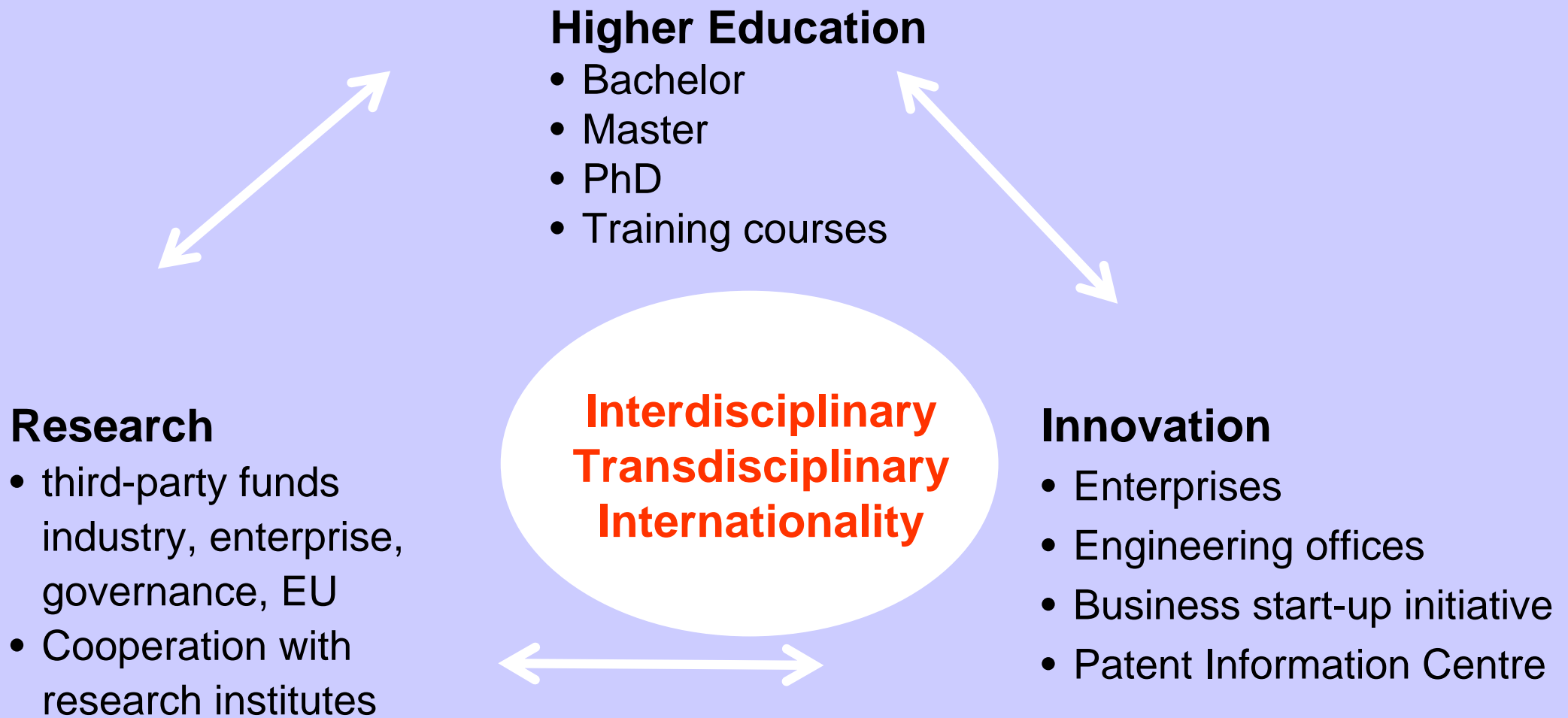
- Internationality of Higher Education; Introduction of the Bologna system,
- Inter-disciplinarity and trans-disciplinarity of natural sciences and engineering for new education and research fields
- Creation of master and PhD study courses in water engineering for all public universities in Syria under using of the existing study courses of the faculty civil engineering and/or agriculture to overcome the fragmentation.
- Development of Knowledge triangle Research –Education – Innovation

### Goal:

Education of highly motivated scientists on the water sector as one of the priority sectors of Syrian economic system who correspond to the requirements of the modern working market

# Knowledge triangle

## Research – Education - Innovation



# Workplan – actual level

[illegible]

# Work packages - overview

WP	Type	Lead Partner/Collaboration	Title of WP	Start	End	Duration
WP.1	Development	<b>TUD</b> MHE, BOKU, URO, HTWD, CULS, UO, DAM, ALBA, TIU, AU, HIWM, SMUL, SEED, MUS, GCEC, ACSAD,	Higher education in the field of water engineering	1	25	25
WP2	Development	<b>BOKU</b> TUD, MHE, URO, HTWD, CULS, UO, DAM, ALBA, TIU, AU, HIWM, SMUL, SEED, MUS, GCEC, ACSAD,	Research at the universities	6	21	16
WP.3	Development	<b>HTWD</b> TUD, MHE, BOKU, URO, CULS, UO, DAM, ALBA, TIU, AU, HIWM, SMUL, SEED, MUS, GCEC, ACSAD,	Innovation	26	32	7
WP.4	Development	<b>ALBA</b> TUD, MHE, BOKU, URO, HTWD, CULS, UO, DAM, TIU, AU, HIWM, SMUL, SEED, MUS, GCEC, ACSAD,	Triangle of education, research and innovation	5	36	32
WP.5	Dissemination	<b>AU</b> TUD, MHE, BOKU, URO, HTWD, CULS, UO, DAM, ALBA, TIU, HIWM, ACSAD,	Dissemination, Capacity building	25	36	12
WP.6	Exploitation	<b>DAM</b> TUD, MHE, BOKU, URO, HTWD, CULS, UO, ALBA, TIU, AU, HIWM, SMUL, SEED, MUS, GCEC, ACSAD,	Sustainability	1	36	36
WP.7	Quality plan	<b>TUD</b>	Quality protection	1	36	36
WP.8	Management	<b>TUD</b> <b>DAM</b>	Consortium Management	1	36	36

# Deliverables - overview

	<i>Title</i>	<i>Delivery Date</i>	<i>Leader</i>	<i>State</i>
1.2	Comparison of higher education systems	2011-01	TUD	finished
1.4	Development of higher education structure for Syria	2012-02	TUD	in progress
1.6	Definition of the modules for the new education	2012-02	TUD	in progress
1.7	Developing of teaching materials	2012-02	TUD	in progress
1.8	Quality Management and Accreditation	2012-02	TUD	in progress
1.10	Developing of professional training courses	2012-11	TUD	in progress
2.1	Comparison of research to quality and quantity	2011-12	BOKU	In progress
2.3	Developing of research structure in SY universities	2012-07	BOKU	in progress
3.1	Comparison of innovation	2013-01	HTWD	later
3.3	Developing of innovation transfer system	2013-05	HTWD	later
4.1	Development of the triangle system	2013-09	ALBA	in progress
5.1	Internal dissemination	2013-03	AU	later
5.2	External dissemination	2013-09	AU	later
6.1	Realisation of new structure	2013-09	DAM	in progress
6.2	Validation of new structures	2013-09	DAM	in progress
7.1	Internal and external monitoring	2013-09	TUD	in progress
7.2	Inter project coaching	2013-09	TUD	in progress
8	Management	2013-09	TUD, DAM	in progress

# Resume – previous workshops

## I. Kick-off meeting Damascus 09.-13.01.2011

- Overview of Tempus in Syria by TEMPUS office – Dr. Ayubi
- Structure of HES in Syria by MHE – Dr. Wahed
- Presentation of the project EDUWAT by Project Coordinator - Prof. Gräber  
Reform of Higher Education by
  - Knowledge triangle Research – Education – Innovation
  - Interdisciplinarity – Transdisciplinarity - Internationality
- Self-presentation of all partners
- Presentation of structures of Higher Education in the field of Water engineering/-sciences at participated Syrian and EU universities
- Visiting of University Damascus, Faculty of Civil Engineering
- Getting an overview of the culture, nature, history and living in Syria



## Kick-off meeting Damascus 09.-13.01.2011





## II. Workshop at TU Dresden 06.-09.06.2011

- Reforming of the Higher Education in the field of water sciences by
  - Stronger linking between natural sciences, civil engineering and basic sciences
  - Greater involvement of research into the education;
  - Implementation of research results into the practice
  - Short-term implementing of innovative solutions from practice into the education
  - Defragmentation; more intensively connection between faculties (Export-Import of education)
- The principles of the Bologna-Process
- Presentation of the Department of Hydro Sciences - education concepts and equipments
- Visiting of practical examples for linking of education and research:
  - Tour of the river bank drinking water plant in Dresden-Hosterwitz
  - Tour of a sewage treatment plant in Dresden-Kaditz
  - Visiting of a remediation of contaminated site at former airport in Grossenhain
- Getting an overview of the culture, nature, history and living in Germany

## II. Workshop TU Dresden 06.-09.06.2011



### **III. Workshop at BOKU Vienna 09.-13.09.2011**

- Discussion about the new Higher Education structure in the participating Syrian universities in accordance with the Bologna process
- Preparation of educational schemes for Bachelor and Master courses in the field of Water Engineering, Hydrology and Soil Sciences (group working)
- Getting an overview of the Quality Management and Research Service at the BOKU Vienna
- Introduction of Department Water, Atmosphere and Environment with the institutes of Waste Management, Hydrobiology and Aquatic Ecosystem Management, Sanitary Engineering and Water Pollution Control, Meteorology , - Hydraulics and Rural Water Management, Water Management, Hydrology and Hydraulic Engineering
- Visit of Laboratories of Department
- Visit of “Hundertwasser” Waste Incinerator
- Fieldtrip Marchfeld, Field site of soil water content monitoring, farmers training,
- Getting an overview of the culture, nature, history and living in Austria



### III. Workshop BOKU Vienna 09.-13.09.2011



# **Current activities:**

## **Adapting of education structure to Bologna-Process**

- Development of 3 fields of study:
  - Hydro-Engineering/Management
  - Hydro-Sciences/Hydrology
  - Soil-and Groundwater Science and Engineering
- Reduction in the total study period of 5 years (Bachelor + Master)
- Modularization of the course structure
- Introduction of the of credit point system (ECTS)
- Acceptance of certificates in the EU
- Introduction of Long Life Learning process
- Inclusion of the students in the development and decisions about the education.

# **Current activities:**

## **Adapting of education structure to Bologna-Process**

### **General structure of Bachelor study**

- Duration: 3 years (6 semester)
- Per semester 30 Credits , 180 Credits total
- Modularization of education

The curriculum is structured in a modular way.

In each module the course content lectures /exercises /seminar /practicum /field trips /selfstudy .

- Mandatory modules (...% of modules)
- Elective modules (.... % of modules)
- Practical training/projects (research, teamwork)
- Bachelor thesis (18 Credits)
- Study Regulations, Examination Regulations

#### **Content:**

- Modules with Basics in Mathematics and Natural Sciences
- Modules with Basics in Water Engineering
- Modules with subject-specific Basics
- Modules for general Qualification (foreign languages, social sciences, law, economics)
- Practical training /Project
- Defense of the Bachelor thesis



# **Current activities:**

## **Adapting of education structure to Bologna-Process**

### General structure of Master study

- Duration: 2 years (4 semester)
- Per semester 30 Credits , 120 Credits total
- Modularization of education
- The curriculum is structured in a modular way
- Each module content lectures /exercises /seminar /practicum /field trips /self study .
- Mandatory modules (...% of modules)
- Elective modules (.... % of modules)
- Practical training/projects (research, teamwork)
- Master thesis (30 Credits)
- Study Regulations, Examination Regulations

### **Content:**

- Modules for Water Engineering/Hydrology/Soil and Groundwater
- Modules with specialized Basics
- Practical training /Project
- Defense of the Master thesis

# Resume – Further activities

## **After workshop in Vienna**

Development and discussion of the drafts of the new study courses by the Damascus university , Tishreen university and Aleppo university

## **Travel activities**

Visiting of TU Dresden / HTW Dresden by

- Dr. Hayek - TiU
- Dr. Abdulillah Abdou - ALBA
- Dr. Wael Seif - DAM

## **Other activities**

Purchase of equipment for the hydraulic laboratory of the Faculty of Civil Engineering at Damascus University