



Development of a Modern Higher Education System for Water Engineering in Syria

TEMPUS PROJECT

EDUWAT

511251-TEMPUS-1-2010-1-DE-TEMPUS-SMHES

Kick-off Meeting Damascus 09-13/01/2011

Report of Al Baath University

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Prof Abdulilah Abdou



Structure of HES for Water Engineering and Management in Al Baath University.

Introduction:

The faculty of civil engineering and The Water Resources Engineering and Management Department taking the lead of all programs related to Water engineering and management with the cooperation of the Faculty of agriculture and environmental Engineering Dept.



Structure of HES for Water Engineering and Management in Al Baath University.

Water Resources Engineering and Management Department WREM

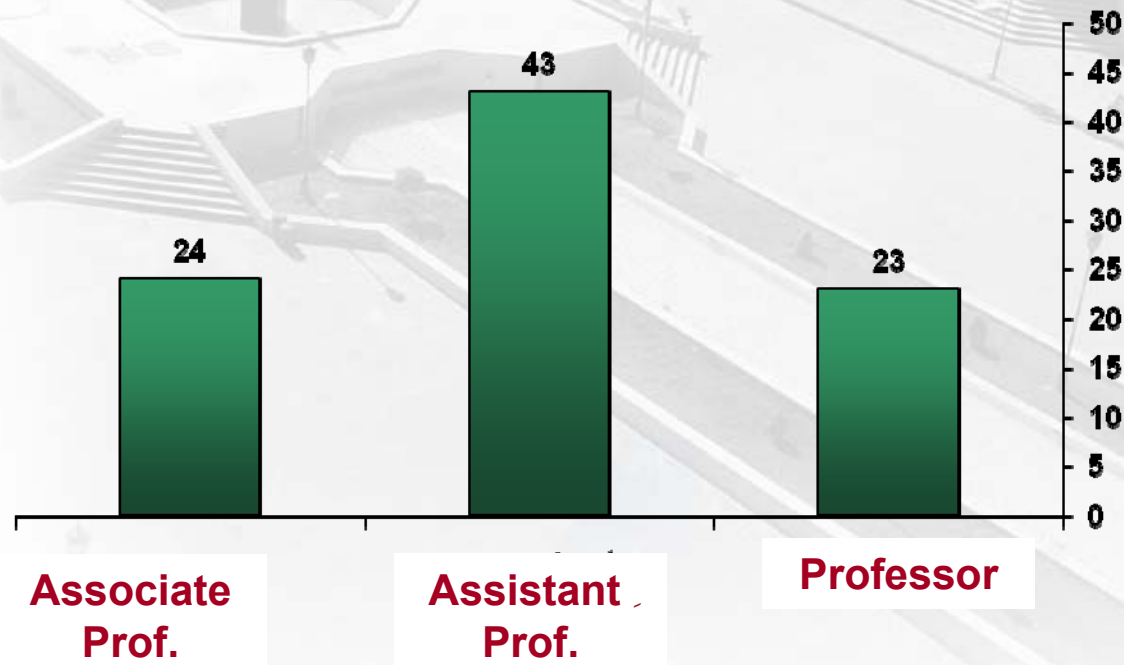
seek to prepare graduate who are able to meet the need of society,

- To develop a concrete base for researches and innovations.
- To Develop research capacity and educational performance depending on the scientific sessions, symposia and conferences.
- The development of joint programs between divisions, universities, companies..authorities



Faculty of Civil Engineering

STAFF

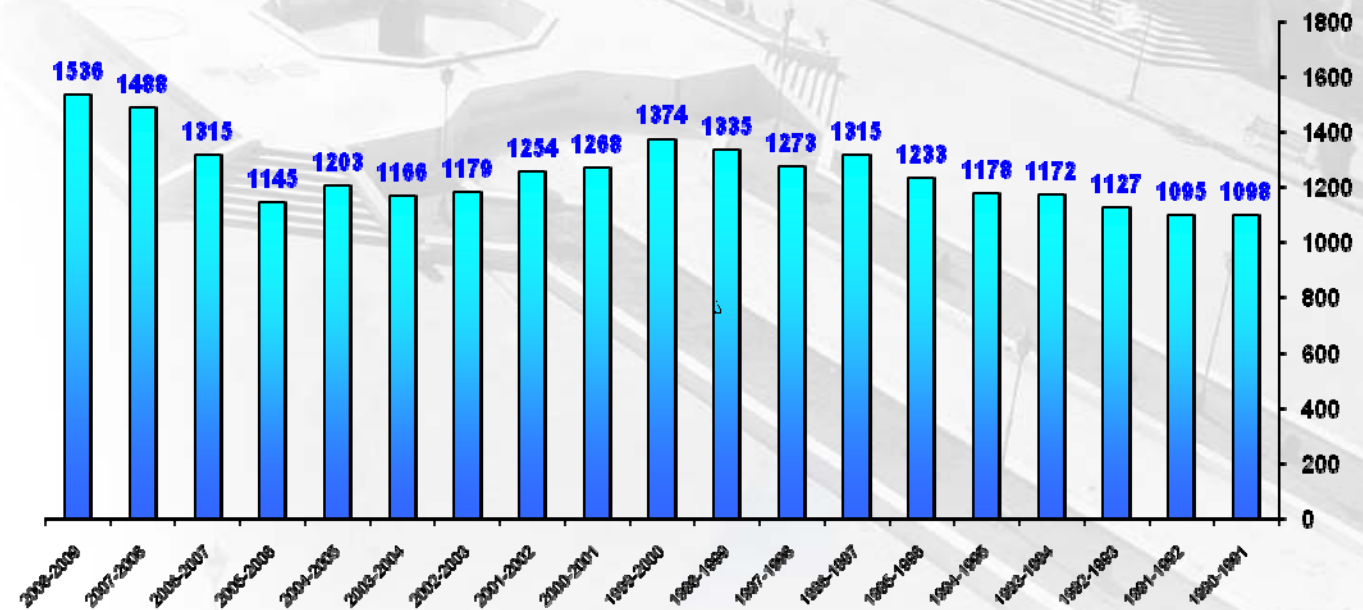




Faculty of Civil Engineering

54% male
46% female

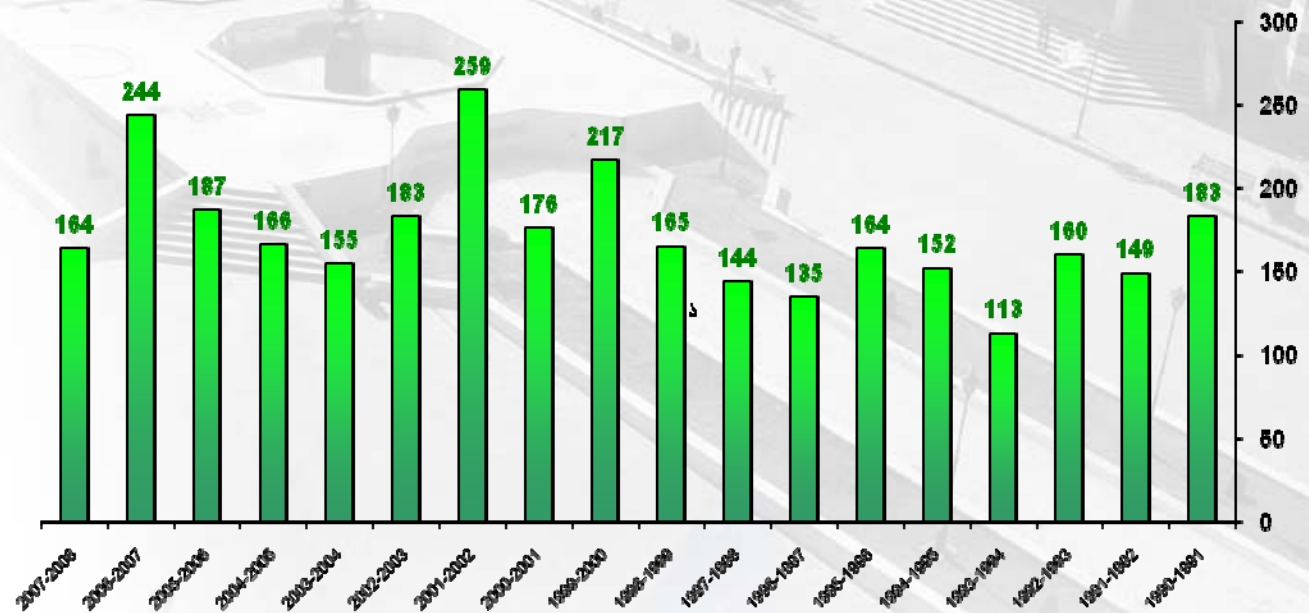
STUDENTS





Faculty of Civil Engineering

GRADUATES





Structure of HES for Water Engineering and Management in Al Baath University

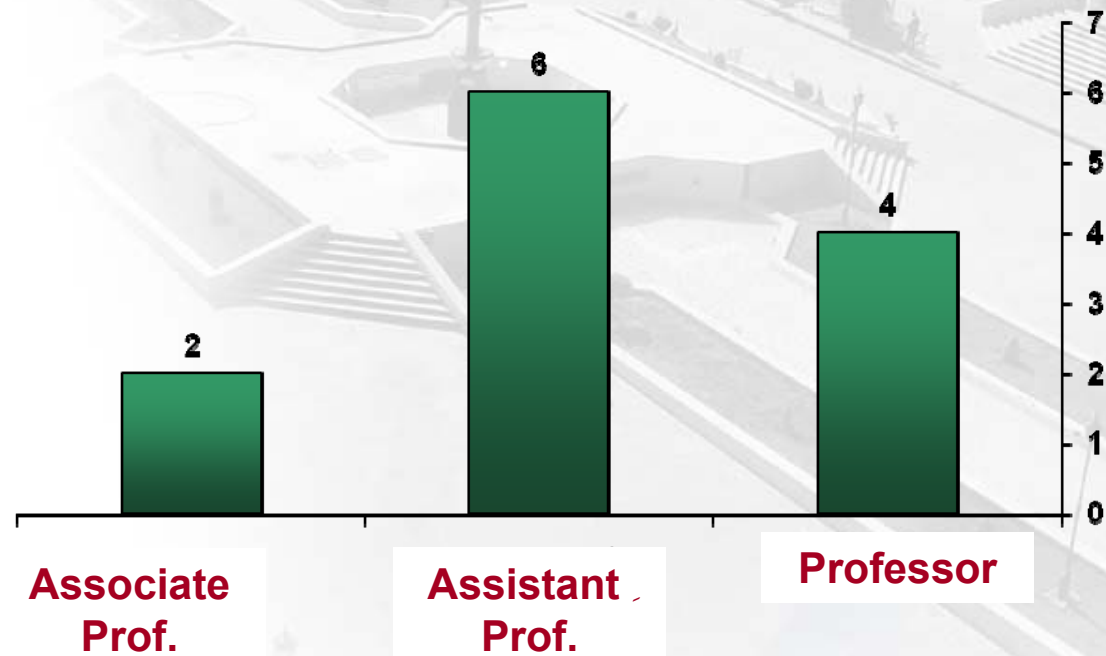
Academic and teaching staff in WREM Dept.

Staff Specialization	Academic staff	Engineers
Irrigation and Drainage - land reclaimination	9	6
Hydraulics and water engineering Management	4	3
Hydraulic structures	2	2



Water Recourses Engineering and Management

Academic STAFF

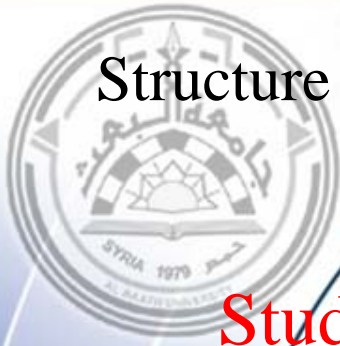




Water Recourses Engineering and Management

Laboratories in WREM

1. Irrigation and hydraulic structure Lab
2. Hydraulics Lab
3. Outdoor irrigation field: include
 - Class A basin for evaporation measurement
 - Climatological station
 - Irrigation networks



Structure of HES for Water Engineering and Management in Al Baath University.

Study courses in WREM

B Sc of civil engineering with the specialization of WREM.
About 150 student, 5 year,

M Sc in WREM 15 student.

2 year (in the 1st year six subjects modules),
(in the 2nd year a research project has to be conducted)

Ph D: the department of WREM awarded 2 Ph D degrees and
two PhD research under going:



Topics /modules in B Sc courses in WREM

First year					
First semester			Second semester		
Topics	No Hrs		Topics	No Hrs	
	Theo.	Prac.		Theo.	Prac.
Math 1	2	2	Math 2	2	2
Engineering Physics	2	2	Chemistry for Engineers	2	2
Mechanics 1	2	2	Mechanics 2	2	2
Geometry	2	4	IT and Programming	2	4
Engineering Geology	2	2	Arabic language	2	-
Social Culture	2	-	Engineering Drawing	2	4
English language 1	4	-	English language 2	4	-
	16	12		16	4



Topics /modules in B Sc courses in WREM

Second year					
First semester			Second semester		
Topics	No Hrs		Topics	No Hrs	
	Theo.	Prac.		Theo.	Prac.
Math 3	2	2	Hydrology 1	2	2
Strength of materials 1	2	2	Strength of Materials 2	2	2
Building Materials	4	2	Principle of Irrigation	2	2
Agriculture Soils	2	2	Hydraulics 1	4	2
Surveying 1	2	2	Surveying 2	2	4
English language 3	4	-	English language 4	4	-
	16	10		16	12



Topics /modules in B Sc courses in WREM

Third year					
First semester			Second semester		
Topics	No Hrs		Topics	No Hrs	
	Theo.	Prac.		Theo.	Prac.
Hydraulics 2	2	4	Hydraulics 3	2	2
Reinforced Concrete 1	4	2	Reinforced Concrete 2	2	4
Soil Mechanics 1	2	2	Soil Mechanics 2	2	2
Structure Mechanics	2	2	Dams Geo-Technique	2	2
Drainage 1	2	2	Hydrology 2	2	2
Road Engineering	4	2	Hydraulic Structures	4	2
	16	14		14	14

Topics /modules in B Sc courses in WREM

Forth year					
First semester			Second semester		
Topics	No Hrs		Topics	No Hrs	
	Theo.	Prac.		Theo.	Prac.
Hydro-Geology 1	2	2	Development and planning of Water recourses	4	2
Irrigation structures	2	2	Sprinkler irrigation	2	2
GIS	2	2	Steel structures	2	2
Environmental engineering 1	2	2	Environmental engineering 2	2	2
Earth dams	4	2	Foundations and retaining walls	4	2
Analysis of engineering systems	2	2	Drainage 2	2	2
	14	12		16	12

Topics /modules in B Sc courses in WREM

Fifth year					
First semester			Second semester		
Topics	No Hrs		Topics	No Hrs	
	Theo.	Prac.		Theo.	Prac.
Concrete dams	2	2	Using and Maintenance of hydraulic structures	4	2
Pumping station design	4	2	Local irrigation	2	2
Hydro-Geology 2	4	2	Water and soil conservation engineering	2	2
Drainage 3	2	2	Technology of water project	2	2
Economic engineering	2	2	Math modeling in water Recourses management	2	2
Graduate project	-	6	Graduate project	-	6
	14	16		12	16



Topics /modules in M Sc courses in WREM

MSc COURSE in WREM		
First academic year		
Modules (all compulsory)	No Hrs	
	Theo.	Prac.
Integrated water resources management	2	2
Advanced Hydraulics	2	2
Hydrology of surface and underground water	2	2
Structures of irrigation and Drainage networks	2	2
Dams and related structures	2	2
Advanced Math and Programming	2	2
second academic year		
Individual research project		2

Master project granted the degree of M Sc

	M Sc Titels	Date of award
1	Determine of transeaporation for Palmira Oasis using energy budget method: Analytical and experimental studies	2004
2	Mathematical model for setelment of in use erath dams (Rasten dam)	
3	Studing and analysis of transeaporation ETP in the middle land.	2008
4	The effect of flood wave resulted from earth dam failer	2008
5	Water balance for water surface in the upstream areas of Orontes basin in the syrian lands and its prospective.	2004
6	Analytical study for solving water hammer proplems resulted from startup and trip of submersible pumps	2010
7	Reduction of water hammer effect by using gas accumulator and vacuum breaking valve in deliveray pipes and water network	2010
8		2010



PhD researches in WREM

Ph D degree granted by the department 2

	Ph D Titels	Date of award
1	Modeling for calculating the potential evapotranspiration depend on the evaporation from the water surface for the Homs-Hama region	2008
2	Rationalization of water resources utilization in the Upper Orontes basin-Syria	2008



Topics/modules are realized in the HES by Al Baath university

- Combination between theory and practical education (lectures and exercises) is realized
- a complex analyze of the compartments “Atmosphere-Plant-Soil-Water” and there interactions is not well seeing in the program.
- Integrated Water resources management introduced to the Master students.
- more advanced Mathematics modeling and simulation, Technical regulation, Standardization, is needed in all programs.



The factors influences the research during the education process

- The main Topic of the research
- The main research funding
- The main user of the research
- The research cooperation inside and outside of the university



Cooperation and Development

- Running academic developing projects in cooperation with many international universities & institutes,
- Professors and students exchange visit (DAAD German Academic Exchange Service)

TEMPUS (European Commission Programs for University Training and Education):



Cooperation and Development

- **Development of the WREM**
- To introduce the modern structure of higher Education,
- to have progressively education and research structures,
- offering and transferring experiences between other university and institutes,
- development of new relationship with EU university



Thank You