



SWIM- Sustain Water MED: Network of Demonstration Activities for Sustainable Integrated Wastewater Treatment and Reuse in the Mediterranean

*SWIM Regional Training Course on
Decentralized Wastewater Treatment and Reuse
3rd- 7th November 2013, Corp Hotel, Amman –Jordan*

Day	Time	Topics /Trainer	Description	Content
Day 1	09:00 – 10:00	Course Introduction	Opening	<ul style="list-style-type: none"> - Registration - Key note speeches by MWI, GIZ and BAU
	10:00 – 10:30	Course Introduction	General introduction to training content and goals	
	10:30 – 10:45	Coffee Break		
	10:45 – 12:30	Introduction to Wastewater Management (WWM) By Dr. Maha Halalsheh	The trainee will learn to differentiate between different scales of wastewater treatment systems over a wide range of solution arrays	<ul style="list-style-type: none"> - Definition of WWM and levels - Centralized vs. decentralized WWM - Scales of Decentralized WWM (DWWM) - Environmental and economic aspects of DWWM - Treated wastewater as an alternative water resource
	12:30 – 01:30	Lunch		
	01:30 – 02:00	Country presentation	Morocco	
	02:00 - 3:15	Wastewater Characteristics By Dr. Ghaida Abu Rumman	Physical, chemical and biological characteristics of wastewater will be explained in the context of DWWM Exercise on loadings' calculations	<ul style="list-style-type: none"> - Physical, chemical and biological constituents of wastewater - Loadings' calculations
	03:15 – 03:30	Coffee Break		
	03:30 – 04:45	Wastewater Characteristics (cont.) By Dr. Gaida Abu Rumman		<ul style="list-style-type: none"> - Major parameters in WW - Nutrients in WW - Refractory organics in WW





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Day	Time	Topics /Trainer	Description	Content
Day 2	09:00 – 10:30	Site Selection (Session I) By Dr. Jamal Abu-Ashur	The trainee will learn how to identify areas that require sanitation based on DWWM	<ul style="list-style-type: none"> - Centralized or decentralized solutions - Selection criteria <ul style="list-style-type: none"> o Socioeconomic o Environmental o Cultural and heritage
	10:30 – 10:45	Coffee Break		
	10:45 – 12:30	Site Selection (Session II) By Dr. Jamal Abu-Ashur	The trainee will learn how to identify areas that require sanitation based on DWWM	<ul style="list-style-type: none"> - Optimization tool <ul style="list-style-type: none"> o Automized (GIS) o Classical
	12:30 – 01:30	Lunch		
	01:30 – 02:00	Country presentation	Jordan	
	02:00 – 03:15	Technology selection (Session I) By Dr. Jamal Abu-Ashur	Different downscaled technologies will be highlighted, identified and characterized	<ul style="list-style-type: none"> - Septic tanks with possible modifications - Low cost technologies (i.e. wetland) - Mechanical units (SBR, MBR, RBC, etc.) - Selection criteria
	03:15 – 03:30	Coffee Break		
	03:30 – 04:45	Technology selection (Session II) By Dr. Jamal Abu-Ashur	Exercise on technology selection <ul style="list-style-type: none"> - Site specific - Efficiency - Energy requirements - Environmental 	In class group assignments





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Day 3	09:00 – 10:30	Technology Design (Session I) By Dr. Bashar Ammary	Engineering design of decentralized technologies will be discussed. In addition, operation and maintenance of these technologies will comprise a considerable part of the training	Engineering Design - Horizontal and vertical flow constructed wetland
	10:30 – 10:45	Coffee Break		
	10:45 – 12:30	Technology Design (Session II) By Dr. Bashar Ammary		Engineering Design - Modified septic tank (MST) - SBR
	12:30 – 01:30	Lunch		
	01:30 – 02:00	Country Presentation	Tunisia	
	02:00 – 03:15	Technology Design (Session III) By Dr. Bashar Ammary		Operation and Maintenance Troubleshooting
	03:15 – 03:30	Coffee Break		
	03:30 – 04:45	Technology Design (Session IV) By Dr. Bashar Ammary	Exercise on technology design - Parameters; Loadings - Technologies; Wetland, SBR, MST	In class group assignments





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Day 4	09:00 – 10:30	International standards and guidelines By Dr. Maha Halalsheh	What guidelines are available, how are they differentiated?	<ul style="list-style-type: none"> - Building codes - International WW standards - Jordanian standards JS893/2006 	
	10:30 – 10:45	Coffee Break			
	10:45 – 12:30	WW reuse, technologies and guideline By Dr. Maha Halalsheh	Means to dispose of the treated wastewater will be discussed. What kinds of reuse options are available on the market	<ul style="list-style-type: none"> - Wastewater reuse in Arab region - Water Reuse Strategies - Health and Environmental Risks - Wastewater Reuse Guidelines 	
	12:30 – 01:30	Lunch			
	01:30 – 02:00	Country Presentation	Egypt		
	02:00 – 03:15	Environmental Impact Assessment (Session I) By Dr. Nedal Oran	Indicators and mitigation measures, and environmental management plan	<ul style="list-style-type: none"> - EIA principles - EIA process and reporting 	
	03:15 – 03:30	Coffee Break			
	03:30 – 04:45	Environmental Impact Assessment (Session II) By Dr. Nedal Oran	Exercise on EIA <ul style="list-style-type: none"> - Regulations - Scoping - Reporting 	In class group assignments	





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Day	Time	Topics /Trainer	Description	Content
Day 5	09:00 – 09:30	Country presentation	Jordan	
	09:30 – 11:30	Working group By Dr. Nedal Oran	The trainees will team up to work on different selection criteria for site, treatment technology and ESIA. Practical example includes SWIM pilot project at PSD in Jordan	Working groups - Site selection - Technology selection - ESIA
	10:30 – 10:45	Coffee Break		
	11:30 – 12:30	Working group – presentations		Presentation of working groups One presentation per group
	12:30 – 01:30	Lunch		
	01:30 – 03:00	Field visit 1	Excursion to SWIM Pilot plant at Public Security Directorate (PSD)	Field visit to the SPR construction site
	03:00 – 04:45	Field visit 2	Excursion to the SMART research and demonstration site at Fuhais - Jordan	Field visit to the SMART demonstration site; MST, SBR, Wetland, and more
	04:45 – 05:00	Evaluation	Training evaluation	Evaluation Forms
	18:00 – 22:00	Dinner	Zwaddah – Fuhais / Kan Zamaan - Mugabalin	

