

## COURSE OUTLINE

Day	Topic	Details	Time (hour)
Day Three	<b>Electrical Installations</b>	Power connection Electricity monitoring and control system Generator system	1.5
	<b>Mechanical installation</b>	Flow Meters - Types of flow meters - Flow meters installation and Maintenance Pumps Alignment Diesel engines	1.5
	<b>Operating of pumping station</b>	Shift changeover check Hourly data log Daily work Flow direction Star up of the pumping units Chlorination system starting Reporting and documentation	3.0
Day Four	<b>Emergency Operating Plans and Procedures</b>	Vulnerability analysis for emergency conditions: - Power and Equipment failure - Natural disasters - Failure of emergency warning system Methods to reduce vulnerability Emergency notification system	1.5
	<b>Maintenance Procedures</b>	Preventive maintenance Daily inspection Lubrication Prevention of water hammer and cavitations Pumps failures and trouble shooting Corrosion prevention Components of chlorination system	1.5
	<b>Chlorination System</b>	Liquid chlorine and liquid chlorine pump Safe storage of chlorine Chlorine Gas Scrubber	3.0
Day Five	<b>Site visit to Taj &amp; Dabouge pumping station</b>	Practical Training on the using of chlorine gas, maintenance kits and safety equipment.	4.0
	<b>Summary</b>	Course Overview/ Open Discussion	1.0
	<b>Feedback/Evaluation</b>		1.0

Water Utilities  
Management Capacity  
Building Program  
WUM-CBP

## O&M of Water Pumping Stations

22th to 26th, January 2012, Amman - Jordan



**Total Training Hours: 30**

## COURSE DESCRIPTION

<b>Objectives</b>	The training course aims to train the operators how to operate and maintain water pumping station, overcome common daily problems, and relevant health and safety measurements.
<b>Contents</b>	Jordanian Guideline no. 202 O&M of Domestic Water Pumping Stations and further materials.
<b>Target Group</b>	Technical staff, operators and engineers who are working in the field of operating and maintenance of water supply pumping stations with minimum work experience two years.
<b>No. of participants</b>	Maximum 20 Participants.
<b>Trainers</b>	-Eng. Maher Haddadin: Mechanical Engineer, owner and manager of Modern Industrial Services Establishment, conducted several training courses on Pumps Basic Hydraulics, Pumps and UV Disinfection. -Eng. Abdelrahman Al-Omari: Manager of operation and maintenance at Engicon with 41 years of experience in the field of O&M. -Eng. Wael Zureikat: Head of Mechanical Engineering Department of Engicon with 18 years experience in field of mechanical works.
<b>Training Methods</b>	Lectures, site visits, discussions, practical training.
<b>Training Language</b>	Arabic/English
<b>Date</b>	22 - 26, January, 2012
<b>Location</b>	Engicon O&M Training Centre, Amman
<b>Duration</b>	5 days (30 hours)
<b>Test</b>	Written test, minimum. 0.5 hour Multiple Choice Test
<b>Certificate</b>	Certificate will be issued by ACWUA, Engicon O&M and DWA to all attendees completing minimum of 85% of the total training hours.

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Day	Topic	Details	Time (H)
Day One	<b>Introduction</b>	Welcome, Training Course Outline, Expectations	<b>1.5</b>
	<b>Water Supply Pumping Station</b>	Description of various components of pumping station Facility overview	<b>1.5</b>
		Basic of water supply system	<b>1.5</b>
		Responsibilities of the pumping station operator	<b>1.5</b>
Day Two	<b>Health &amp; Safety Instructions and Requirements</b>	Personal protective equipments Safety equipments at the site Equipment hazards: safety measures in handling motors, controls, pumps, electrical systems...etc.	<b>3.0</b>
		site spill hazards, cleaning the site, station security, doors, gates, locks...etc. Security procedures Lockout Tagout and Permit to work	<b>2h</b>
	<b>Pumps</b>	Pumps types and performance Pumps selection Pumps construction Basic pump hydraulics	
	<b>Valves</b>	Gate valves Butterfly valves Air vent valves Surge vessels	