

Course Name	Code\No.	Number of Credits			
		Theo.	Lab.	Train.	Credit
Hydrology & Water Resources in the Kingdom	HWR 313	3	-	1	3
Pre-Requests	HWR 221 – HWR 231				

Course Objectives:

This course aims to provide knowledge to the students about surface water and groundwater resources, dams, wadis, springs, drinking water and desalination in Kingdom of Saudi Arabia through lectures and visits and trips to governmental agencies and private offices. In addition, students learn how chose a topic of term project and prepare report and presentation about it.

Course Contents:

1. General feature of water resources in the Kingdom: Geography, Geology, climate, Geomorphology, Arabian Shield, Sedimentary regions.
2. Groundwater in the Kingdom: Deep Groundwater, main groundwater aquifers in sedimentary regions, Saq aquifer, Wajeed aquifer, Tabouk aquifer, Manjour aquifer, Baidh aquifer, Wasseer aquifer, UmRundumah aquifer, Dammam aquifer, Newjeen aquifer, Secondary aquifers, groundwater in wadi's sediments.
3. Springs in the Kingdom: Aziziah, Wadi Fatimah, Zubaidah, Taif, Madinah, Aflaj springs, Hot springs, Ahsa springs, Gulf springs, Zamzam well.
4. Surface water in the Kingdom: Wadin in the Kingdom, Arabian shield hydrology, Wadin In Makkah region, Wadis in Madinah region, Wadis in Jazan region, Wadis in Asir, Baha and Najran regions, Wadis in Riydh region, Wadis in Gassim region, Wadis in northern region.
5. Dams and hydrological studies: Types and purposes of dams, number and distribution of dams in the Kingdom, Hydrological studies, hydrological publications.
6. Drinking water in the Kingdom: drinking water projects in the Kingdom, main cities projects, regional drinking water projects, water towers, drinking water projects in towns and villages, water desalination in the Kingdom.

Course outcomes:

It is expected that the student will get the following knowledge and experience:

1. Recognize basic information about the climate, geography and geology of the Kingdom.
2. List different sources of water at the Kingdom.
3. Name major groundwater aquifers in the Kingdom.
4. Recognize major basins and dams in the country.
5. Tell Sources of drinking water to the various regions of the Kingdom.
6. Recognize method of desalination and number as well as production of the desalination plants in the country.
7. Choose a topic of term project.
8. Collect data and present results in report.
9. Prepare of presentation using PowerPoint software
10. Give oral presentation

Evaluation Method:

The evaluation is performed by periodic tests, homework, presentation of term project and reports of term project and field visits and trips.

References:

- أطلس المياه بالملكة (١٩٨٦) وزارة الزراعة والمياه.
- البسام، عبد العزيز (١٤٢٢هـ) المياه الجوفية، مكتبة الملك فهد الوطنية، السعودية
- الخطيب، عبد الباسط (١٩٨٠) سبع سنابل خضر، وزارة الزراعة والمياه.
- نوري، مصطفى (١٤٠٤هـ) الماء ومسيرة التنمية، مطبوعات تامة.
- www.swcc.gov.sa