Jordan University of Science and Technology

Faculty of Agriculture

Natural Resources & Environment Department

NR446 Water Resources
Second Semester 2019-2020

Course Catalog
2 Credit Hours. Introduction. Precipitation. Weather maps. Measurement of precipitation. Vegetated waterway, design, channel capacity. Terracing, design and alignment of terraces. Earth embankments. Reservoirs. Conservation structures. Drop spillways. Pipe spillways. Underground water. Confined aquifers. Unconfined aquifers. Wells. Quality of groundwater. (Prerequisite: NR 342)

Text Book	
Title	Soil and Water Conservation Engineering
Author(s)	Rodney L. Huffman, Delmar D. Fangmeier, William J. Elliot, Stephen R. Workman
Edition	7th Edition
Short Name	Ref #1
Other Information	2013. American Society of Agricultural and Biological Engineers, St. Joseph, Mich.

Instructor	
Name	**Dr. Ammar Albalasmeh**
Office Location	C1L2
Office Hours	Sun : 12:30 - 14:30 Mon : 12:00 - 14:00 Tue : 10:30 - 11:30 Wed : 11:30 - 12:30
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Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue : 09:30 - 10:30
Room: G2123

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2	Introduction, Global water, Fresh water, Importance of water, Properties of water, Hydrologic processes, Water resources problems, Precipitation, Weather maps, Measurement of precipitation, Rainfall storms, Classification of storms, Average depth over area.	From **Ref #1**
Weeks 3, 4, 5, 6	Runoff, Water control structures, Components of runoff, Runoff process, Estimating runoff volume.	From **Ref #1**
Weeks 7, 8	Surface water, Water hydrology, Watersheds, Overland flow, Rivers, Rivers discharge, Lakes, Farm ponds, Evaporation rates, Water requirements.	From **Ref #1**
Weeks 9, 10, 11	Conservation structures, Temporary and permanent structures, Drop spillways, Chutes, Pipe spillways, Irrigation and drainage structures.	From **Ref #1**
Weeks 12, 13, 14	Earth embankments, Types of earth embankments, Foundation and earth fill requirements, Side slopes, Top width, Freeboard, Compaction and settlement, Wave protection.	From **Ref #1**
Weeks 14, 15, 16	Underground water, source of groundwater, confined aquifers, unconfined aquifers, quality of groundwater, wells.	From **Ref #1**

Policy	
Exams	All exams are closed book and notes. The final exam is comprehensive (covers all the material). Incomplete exams need approval from the department head/dean. The exams will include a variety of questions including computational and short answer questions.
Cheating	Prohibited; and in case of cheating the student will be subject to punishment according to the Jordan University of Science and Technology regulations.
Attendance	Mandatory according to the Jordan University of Science and Technology policy.
Participation	Participation in class discussions and activities is expected.

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