

Zarqa University
0902451 Hydraulics and Hydrology
Engineering
Faculty of Engineering
Department: Civil Engineering
Course title: Engineering Statistics



Prerequisite: None
Instructor: Dr. Ahmed A. Abuo
Elmagd Bassiouni
Lecture's time: multiple sections
Semester: Second, 2017.
Office Hours: 11:00-12:00, Mo, We

Course description:

Provides a basic understanding of engineering hydrology through the hydrologic cycle, watershed characteristics, atmospheric water, Water Losses, infiltration and evaporation, stream flow analysis, rainfall-runoff processes, Hydrographs.

Aims of the course:

1. Identify and describe the processes and quantities involved in the hydrologic cycle.
2. Quantify the components of the water balance of a watershed.
3. Calculate hydrologic losses due to evaporation and infiltration.
4. Calculate hydrographs based on stream flow and precipitation measurements, watershed attributes and unit hydrograph theory.

Intended Learning Outcomes (ILOs):

- 1) Employ mathematics, science, to quantify the hydrologic cycle components.
- 2) Analyze and interpret data to Quantify the probability associated with extreme hydrologic events and the magnitude of hydrologic events of specified recurrence interval and frequency.
- 3) Identify, formulate, and solve hydrologic and statistical problems.
- 4) Employ the broad education necessary to understand the application of water losses and run-off in the field of irrigation and to protect buildings from floods.

Course structures:

Week	C. Hrs	ILOs	Topics	Teaching Procedure	Assessment methods
Week 1-3		1+3	Syllabus, Course Schedule; Introduction to Hydrologic Principles and hydrologic cycle	PPT. lecture	
Week 4-6		1+2+4	Precipitation-example and solved problems to quantify the precipitation.	PPT. lecture	Assignments 1 Test 1_ 10/4/2016
Week 7-8		1+2+3+4	Water losses- infiltration –evaporation-transpiration with and solved problems	PPT. lecture	Assignments 2
Week 8-11		1+3+4	Calculation of runoff and the quantity of water flood on the surface with solved problems.	PPT. lecture	Assignments 3
Week 12-15		1+ 3	Hydrograph to estimate the flow to the stream, predict, analyses of the runoff with solved problems.	PPT. lecture	Test 2_ 28/5/2017 Assignments 4
Week 16			Reports due, Presentation Due		

References:

Updated edition of *Environmental Engineering*,
by J. Jeffrey Peirce and P. Arne Vesilind.

Assessment Methods:

Methods	Grade	Date
Assignments	5	term
Report	5	term
First Exam	20	10/4/2017
Second Exam	20	15/5/2017
Final Exam	50	

