Zarqa University

Faculty of Engineering
Department: Civil
Course title: Water Engineering

Prerequisite: 0902555
Instructor:
Lecture's time:
Semester:
Office Hours:

Course description: Study of population prediction and using it in design of all water supply works, collection, treatment and distribution.

Aims of the course: The aim of the course is learning to how to foresee or predict population and water consumption, and how to design and prepare tender document and Engineering drawings for water treatment plant and distribution system. Understand the nature of environmental pollution and its effects on the environment, health and well being of human, and relation to development. Identify water resources and their environmental pathways. Understand engineering procedures for the control and management of water treatment and distribution. Communicate skillfully through reading, writing and oral presentation

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Intended Learning Outcomes (ILOs):

At the completion of this project management course, the students should be able to

a. Knowledge of mathematics, science and engineering
d. Multidisciplinary teams
f. Professional and ethical responsibility
g. Effective communication
h. Broad education necessary for global, economic, environmental and societal context
j. Knowledge of contemporary issues

Course structures:

Week	C. Hrs	ILOs	Topics	Teaching Procedure	Assessment methods
1	3	1	Sources of water	Lectures and Tutorials	H.W, Quizzes & Exams
2	3	1 & 2	Population prediction	Lectures and Tutorials	H.W, Quizzes & Exams
3	3	1 & 2	Water distr. planning	Lectures and Tutorials	H.W, Quizzes & Exams
4	3	1 & 3	Planning techniques.	Lectures and Tutorials	H.W, Quizzes & Exams
5	3	1, 2, & 3	Coagulation theory	Lectures and Tutorials	H.W, Quizzes & Exams
6	3	1, 2, & 3	Types of the coagulants	Lectures and Tutorials	H.W, Quizzes & Exams
7	3	1, 2, & 3	Design of the flash mixing	Lectures and Tutorials	H.W, Quizzes & Exams
8	3	1, 2 & 4	Flocculation theory	Lectures and Tutorials	H.W, Quizzes & Exams
9	3	1, 2 & 4	Design of flocculation tank	Lectures and Tutorials	H.W, Quizzes & Exams
10		1, 2 & 4	Design of sedimentation tank	Lectures and Tutorials	H.W, Quizzes & Exams
11	3	1, 2 & 4	Design of clariflocculator	Lectures and Tutorials	H.W, Quizzes & Exams
12	3	3 & 4	Filtration Action	Lectures and Tutorials	H.W, Quizzes & Exams
13	3	3 & 4	Design of rapid sand filter	Lectures and Tutorials	H.W, Quizzes & Exams
14	3	5	Water disinfection	Lectures and Tutorials	H.W, Quizzes & Exams
15	3	3 & 4	Design of ground tank	Lectures and Tutorials	H.W, Quizzes & Exams
16	3	3 & 4	Design of elevated tank	Lectures and Tutorials	H.W, Quizzes & Exams

References:

1) Water Work Engineering, (2010) " Planning, Design and Operation", Second Edition.;, 2003. ISBN-13: 978-0131502116. ISBN-10: 8120321537.

2) Water Treatment Plant Design, (2010) "" McGraw-Hill Handbooks " Prentice ISBN-13: 978-0071418720 ISBN-10: 0071418725

Assessment Methods:

Methods	Grade	Date
Exam 1	35	
Exam 2	-	
Quiz 1 + Quiz 2 + Homeworks	15	
Final Exam	50	