جامعة الملك عبدالله
للعلوم والتقنية
King Abdullah University of
Science and Technology

Course Syllabus: Water Quality & Environmental Analysis - EnSE 201

Division	Biological and Environmental Sciences & Engineering Division
Course Number	EnSE 201
Course Title	Water Quality & Environmental Analysis
Academic Semester	Fall
Academic Year	2018/2019
Semester Start Date	08/26/2018
Semester End Date	12/11/2018
Class Schedule (Days & Time)	04:00 PM - 05:30 PM | Mon Wed

Instructor(s)

Name	Email	Phone	Office Location	Office Hours
Peng Wang	Peng.Wang@kaust.edu.sa	+966128082298	4233, 4, Al-Jazri (bldg. 4)	3pm-4pm, Mondays and Wednesdays

Teaching Assistant(s)

Name	Email
N/A	N/A

Course Information

Comprehensive Course Description	The course is designed to provide an understanding of water quality parameters (with a focus on toxic pollutants), their properties, measurement techniques, and control technologies. Risk assessment and fate and transport of pollutants in relation with their physicochemical properties will also be covered.
Course Description from Program Guide	The course covers introduction to water quality parameters (with a focus on toxic pollutants), pollutants properties, measurement techniques, and control technologies. Fate and transport of pollutants in relation with their physicochemical properties, risk assessment in relationship to water quality. environmental analytical techniques, drinking water and domestic wastewater treatment are included.
Goals and Objectives	The students are expected to develop answers to the following questions at the end of the semester: 1. What are the major water pollutants? 2. How do they behave in the environment? 3. How are the pollutants analyzed? 4. What is the basis for defining water quality?
Required Knowledge	Undergraduate chemistry.
Reference Texts	*-Hazardous Wastes: Sources, Pathways, Receptors*, by Richard Watts *-Analytical Chemistry, by Gary D. Christian, Purnendu K. Dasgupta, Kevin A. Schug (Wiley) 7th Edition*
Method of evaluation	**35.00**% - Final exam **10.00**% - Homework /Assignments **35.00**% - Midterm exam **10.00**% - Oral presentation **10.00**% - Attendance and Participation

Nature of the assignments	There will be 3 homework (10%); one may work in a group of two and each group submits one homework.
Course Policies	1. There will be 3 homework (10%); one may work in a group of two and each group submits one homework. 2. There will be one midterm (35%) and one final (35%). Both the midterm and final exam will be close-book. 3. Attendance is required and it accounts for 10% of your final grade. 4. There are student presentations (10%)
Additional Information	

Tentative Course Schedule
(Time, topic/emphasis & resources)

Week	Lectures	Topic
1	Mon 08/27/2018 Wed 08/29/2018	Course introduction; Pollutant classification
2	Mon 09/03/2018 Wed 09/05/2018	Priority and emerging pollutants
3	Mon 09/10/2018 Wed 09/12/2018	Holidays (no class)
4	Mon 09/17/2018 Wed 09/19/2018	Properties of contaminants
5	Mon 09/24/2018 Wed 09/26/2018	Equilibrium distribution of contaminants and NAPL
6	Mon 10/01/2018 Wed 10/03/2018	Soil minerals and organic matters
7	Mon 10/08/2018 Wed 10/10/2018	Pollutant fate and transport
8	Mon 10/15/2018 Wed 10/17/2018	Midterm exam (3 hours)
9	Mon 10/22/2018 Wed 10/24/2018	Environmental analysis: sample preparation
10	Mon 10/29/2018 Wed 10/31/2018	Environmental analysis: spectroscopic methods (1)
11	Mon 11/05/2018 Wed 11/07/2018	Environmental analysis: spectroscopic methods (2)
12	Mon 11/12/2018 Wed 11/14/2018	Environmental analysis: detectors and lab tour
13	Mon 11/19/2018 Wed 11/21/2018	Risk assessemnt (1)
14	Mon 11/26/2018 Wed 11/28/2018	Risk assessment (2)
15	Mon 12/03/2018 Wed 12/05/2018	Student Presentations
16	Mon 12/10/2018	Exam week (3 hours)
17		
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Note

The instructor reserves the right to make changes to this syllabus as necessary.