The Hashemite University Faculty of Science <u>Course Description</u>



Year : 2016/2017

Department: Chemistry.Semester : 2nd Summer Semester

Course Information			
Course Title	Instrumental Analysis		
Course Number	103311.		
Course Credits	3.		
Course Time	8:00 – 9:10.		
Instructor	Dr. Ayman A. Issa.		
Office Location	Chem. 208.		
Office Hours	Daily: 10:30-11:00		
E-mail	aymani@hu.edu.jo		

Text Book			
Title	Principles of Instrumental Analysis.		
Author(s)	Skoog, Holler, and Nieman.		
Publisher	Thomson Brooks		
Edition and Year	6 th Edition, 2007 (5 th Edition can also be used)		
References	Any library book related to Instrumental Analysis or one of the discussed topics in this course; including Atomic Spectroscopy and UV-Vis spectroscopy.		

Evaluation Policy				
Assessment Type	Expected Date	Weight		
Mid-Term Exam	Aug. 17, 2017	40%		
Homeworks and Quizzes	Every Lecture	20%		
Final Exam	Sep. 10 – 14, 2017	40%		
37 .				

Notes:

• All homeworks <u>MUST</u> be submitted via <u>e-mail</u> within a maximum of **THREE** DAYS after finishing the concerned chapter/topic, <u>unless you have been told</u> <u>otherwise.</u>

• Absence from mid-term exam must be followed by an acceptable excuse; where a *Make-up exam* will be held. Otherwise, the grade of **ZERO** will be given.



Teaching and Learning Methods

Lectures, using overhead projector and LCD projector (data show). **Discussion** lectures will be given after each chapter/topic.

Quizzes (oral and written) will be given during lectures and after each chapter. **Homeworks** are required from each student and will be submitted and graded via *e-mail*, unless told otherwise. Subject in email should contain <u>student's</u> <u>name</u>, <u>number</u>, and <u>homework number</u>.

Textbook, Questions, Final Answers, References, Grading and other documents are found in my website:

http://staff.hu.edu.jo/aymani

Course Contents				
Topics	Text-Book Homework questions from 6 th Ed.			
Introduction				
<u>Chapters 1 and 5:</u> Introduction to instrumental methods, calibration techniques, and signals and noise.	 → Solve: chapter 1: 1-11. → Submit the following: 			
	<u>HW 1:</u>			
	Chapter 1: 9, 11 (Excel) HW 2: Chapter 5: 7, 10			
Chapter 6: Introduction to spectrometric methods,	<u>HW 3</u>			
and electromagnetic radiation.	11b, 14c, 15c, 18.			
Atomic Spectroscopy				
<u>Chapter 7:</u> Components and types of optical instruments.	<u>HW 4</u> 9 13 14 19			
<u>Chapters 9:</u> Atomic absorption spectroscopy based upon flame and electrothermal atomization. NOTE: (may be given AFTER chapter 14).	<u>HW 5</u> 6, 14a, 20, 22 (Excel)			
Molecular Spectroscopy				
<u>Chapter 13:</u> An introduction to molecular UV/Vis	<u>HW 6</u>			
absorption spectroscopy.	8, 11, 25 (Excel)			
<u>Chapter 14:</u> Applications of molecular UV/Vis	<u>HW 7 (optional)</u>			
absorption spectroscopy.	7, 8, 11 (Excel)			
Separation Methods				
<i>Chapter 26:</i> An introduction to chromatographic separations.				

Good Luck !