

معلومات المقرر * (Course Information):

اسم المقرر:	طرق الفصل الكروماتوغرافي
رقم المقرر:	CHM414
اسم ورقم المتطلب السابق:	CHM333 ، كيمياء السطوح والغرويات والحفز
اسم ورقم المتطلب المرافق:	لا يوجد
مستوى المقرر:	المستوى الثامن
الساعات المعتمدة:	3
Module Title:	Methods of chromatographic analysis
Module ID:	CHM414
Prerequisite (Co-requisite) :	CHM333 Surface chemistry, colloids and catalysis
Co-requisite :	No requests
Course Level:	Level 8
Credit Hours:	3 Credit hours

Module Description

وصف المقرر :

The primary objective of this course is to provide an overview of modern chromatographic separation techniques. The theory of commonly used separation mechanisms. current instrumentation and applications from various areas. Two lecture hours and one two-hour laboratory session per week. Three credits. Prerequisite CHEM-333

Module Aims

1	The course is designed to introduce the principles of chromatography - modern physicochemical methods for separating of complex mixtures.
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Learning Outcomes: By the end of my course, students should be able to

1	Describe the principles governing chromatographic separations	
2	Describe how chromatographic techniques, methods and detectors are chosen taking into consideration the properties of the analytes and the sample matrix	
3	Describe the mechanism of separation	
4	Compare and differentiate between separation techniques	
5	Assess the suitability of chromatographic techniques for solving specific analytical problems and critically evaluate the results.	
6	Calculate the most important parameters extracted from separation process	
7	Work independently and as part of a team	
8	Demonstrate the ability to use library resources and scientific databases to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry	
9	Demonstrate good and safe handling of laboratory chemicals, glassware and equipment during experiments	

Course Contents:

محتوى المقرر:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
2	1	History and Introduction to Separations
2	1	Mass Transport Processes
2	1	Thermodynamic and Molecular Basis of Equilibrium Separations
2	1	Introduction to Chromatography and Theory of Retention





2	1	Kinetic Processes in Chromatography
2	1	Chromatography on Planar Surfaces
2	1	HPLC Instrumentation
2	1	Adsorption Chromatography (Liquid-Solid Chromatography)
2	1	Partition Chromatography
2	1	Ion-Exchange Chromatography - Ion Chromatography
2	1	Size-Exclusion Chromatography
2	1	Affinity Chromatography
2	1	Chiral Chromatography
2	1	Gas Chromatography
2	1	Electrophoresis
30	15	
		laboratory
4	2	Experiments in paper chromatography
4	2	Experiments in thin layer chromatography
6	3	Experiments in column chromatography
6	3	Experiments in gas chromatography
6	3	Experiments in high performance liquid chromatography
26	13	





Textbook and References:

الكتاب المقرر والمراجع المساندة:

ISBN	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
ISBN-13: 978-0470887578	2014	Wiley	Gary D. Christian	Analytical Chemistry, 7th Edition
	سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
ISBN-13: 978-0470439548	2009	Wiley	Harold M. McNair	Basic Gas Chromatography 2nd Edition

* يتم تعبئة معلومات المقرر فقط باللغتين العربية والانجليزية وباقي المعلومات بلغة التدريس المعتمدة ويكرر لكل مقرر في الخطة الدراسية

* Course Information should be filled in Arabic and English. Other information should be filled using the approved teaching language at the college.



