

نموذج توصيف مقرر
Course Description Form

Name of College\Faculty : Science

Name of Department: Chemistry

اسم الكلية:

اسم القسم العلمي:

Course Name	Applications of Computer and Statistic in Chemistry	اسم المقرر
Course No.	0420201	رقم المقرر
No. of Credits	3	عدد الوحدات
Theoretical Hours	3	عدد الساعات النظرية
Practical Hours	0	عدد الساعات المحلّية
Course topics		مواضيع المقرر
1. Introduction to professionalism, safety, and ethics in chemistry. 2. Basic computer skills: window explorer, FTP. 3. Chemical data analysis using computer software. 4. Determining errors in chemical measurements. - i-Type and source of error (systematic and random) - ii-Error estimation (accuracy, significant figures, rounding) - iii-Mean, standard deviation, standard error of the mean - iv-Propagation of errors - v-Regression analysis - vi-Normal error distribution - vii-Distribution curves 5. Statistical analysis of chemical data 6. Graphical representation 7. Creating Excel Macros 8. Visualizing chemistry - i-Molecular graphics - ii-Presenting chemical information using PowerPoint 9. Chemical resources - i-Navigation and search strategy		

ii-On-line literature, libraries and chemical resources

iii-Chemical database

10. Presenting chemical information (students use their own chemistry data, analyze it, draw graphs and write reports about it and then present results in the class).

Text book: (Name, Author , Year , Publisher)	عنوان الكتاب : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
Experiments in Physical Chemistry D.P. Shoemaker, C.W. Garland and J.W. Nibler, <u>Latest Edition</u> .	
References: (Name , Author , Year . Publisher)	عنوان المرجع : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
1- Excel for Chemist, by E. Joseph Billo, John Wiley, <u>Latest Edition</u> .	
2- Fundamentals of analytical chemistry, by D. A. Skoog, D. M. West, F. J. Holler, and S. R. Crouch, Thompson Brooks Cole, <u>Latest Edition</u> .	

Prerequisites				متطلبات المقرر	
Grading	Exams	50	%	الاختبارات	آلية رصد المقرر
	Quizzes	10	%	امتحانات قصيرة	
	H.W.	0	%	واجبات	
	Project (field study)	0	%	مشاريع (دراسة ميدانية)	
	Final	40	%	الاختبار النهائي	
	100%				

Chapters included:

Chapter	Topic	pages
CH.1	INTRODUCTION	1-28
CH.2	Treatment OF EXPERIMENTAL DATA	29-90
CH.3	LEAST SQUARES FITTING PROCEDURES	663-686
CH.4	APPENDICES	687-720

Course objectives					
No.	Course Objectives (Learning Outcomes)	Example(s) of relevant (Topics and activities)	Recommended Level to satisfy the objectives		
			High	Medium	Low
1	To introduce to the students the basic	Deal in the right way with ethics and safety problems.	x		

	principles of professionalism, safety, and ethics in chemistry.				
2	To analyse and present chemical data/information using computers and computer software's.	- Visualize molecular structure and molecular dynamics. - Handle stoichiometric calculations. - Present the results of his/her analysis using computer software. - Handle simple molecular modelling problems	x		
3	Perform simple statistical methods for treatments of data.	- Analyse equilibrium problems. - Analyse the results of chemical kinetics. - Analyse chemical data and perform simple statistical methods.	x		
Fields	Physical Chemistry				
Skills	Computer				
Coordinator (Name and Rank) :	Physical Chemistry Coordinator				
Signature and stamp :					
Date:	10/11/2025				