

خطة ٢٠١٩ لبرنامج الكيمياء – الكيمياء التطبيقية

Second Year

3rd Level

#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	MATH 201	Calculus I	4	4		
2	PHYS 202	Physics I	4	3	2	
3	CHEM 203	General Chemistry I	4	3	2	
4	BIOL 204	General Biology	4	3	2	
5	HIST 281	History and Civilization of Kingdom of Saudi Arabia	2	2		
Total Cr. Hr.			18			

4th Level

#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	ENGL 210	English for Scientific Communication	3	3		
2	MATH205	Calculus II	4	4		MATH 201
3	CHEM 206	Safety in the Laboratory	1		2	
4	CHEM 207	General Chemistry II	4	3	2	CHEM 203
5	CHEM208	Inorganic Chemistry	3	2	2	CHEM 203
6	ISLM 282	Islamic Ethics and Values	2	2		
Total Cr. Hr.			17			

Third Year						
5 th Level						
#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	STAT 211	Applied Statistics	3	2	2	
2	COMP209	Introduction to Programming	3	2	2	
3	CHEM 301	Introductory to Analytical Chemistry	4	3	2	CHEM 207
4	CHEM 302	Organic Chemistry I	4	3	2	CHEM 203
5	MATH 310	Differential Equations	3	2	2	MATH 205
Total Cr. Hr.			17			
6 th Level						
#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	ENGL 381	Oral Skills for Scientific English	3	3		
2	CHEM 303	Computer Applications in Chemistry	1		2	COMP 209
3	CHEM 304	Instrumental Chemical Analysis I	4	3	2	CHEM 301
4	CHEM 305	Organic Chemistry II	4	3	2	CHEM 302
5	CHEM 306	Thermodynamic Chemistry	3	2	2	CHEM 207 MATH 310
6	BUS 381	Entrepreneurship	2	2		
Total Cr. Hr.			17			

Fourth Year						
7 th Level						
#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	BIOCH 401	Biochemistry I	4	3	2	CHEM 304 CHEM 305
2	CHEM 402	Chem. Kinetics&Reaction Mech	3	2	2	CHEM 207 MATH 310
3	CHEM 405	Chem. of Petroleum and Petrochemicals	2	2		CHEM 305
4	CHEM 406	Electrochemistry	3	2	2	CHEM 306
5	CHEMXXX	Elective Course (A+B)	1-3			-
Total Cr. Hr.			13-15			
8 th Level						
#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	BIOCH 407	Biochemistry II	3	2	2	BIOCH 401
2	CHEM 408	Spectroscopy of Organic Compounds	3	2	2	CHEM 305
3	CHEM 409	Coordination Chemistry	3	2	2	CHEM 208
4	CHEM 411	Instrumental Chemical Analysis II	3	2	2	CHEM 304
5	CHEMXXX	Elective Course (A+B)	1-3			-
Total Cr. Hr.			13-15			
Summer						
#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	CHEM 515	Field Training	2	2	0	Completion of 100 Credit Hour

Fifth Year**9th Level**

#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	CHEM 501	Polymers Chemistry I	2	2		CHEM 305
2	CHEM 505	Advanced Laboratory	2		4	CHEM 304
3	CHEM 506	Solid state Chemistry	2	2		CHEM 208
4	CHEM 507	Surface Chem. and Catalysis	3	2	2	CHEM 402
5	CHEMXXX	Elective Course (A+B)	1-3			-
6	CHEMXXX	Elective Course (A+B)	1-3			
Total Cr. Hr.			12-15			

10th Level

#	Course Code	Course Name	Cr. Hr.	Lec.	Lab.	Pre-requisite
1	CHEM 508	Research Project	2	2		Completion of the 8th level
2	CHEM 512	Chemistry of Corrosion	2	2		CHEM 402 CHEM 406
3	CHEM 513	Polymers Chemistry II	2	2		CHEM 501
4	CHEM 514	Mechanism of Inorganic Reactions	2	2		CHEM 409
5	CHEMXXX	Elective Course (A+B)	1-3			-
6	CHEMXXX	Elective Course (C)	2			
Total Cr. Hr.			11-13			

Elective Courses (List A) (Select 9 hours from A and B)						
Course Code	Course Title	Credit Units	Types of Units		Study Levels	Prerequisites
			Lecture	Laboratory		
CHEM403	Chemistry of Transition Elements	2	2	-	*	Inorganic Chemistry
CHEM404	Chemistry of Heterocyclic Compounds	2	2	-	*	Organic Chemistry II
CHEM450	Environmental Chemistry	2	2	-	*	None
CHEM452	Statistical Thermodynamics	2	2	-	*	Thermodynamic Chemistry
CHEM504	Quantum Chemistry	3	3	-	*	General Chemistry II Differential Equations
Elective Courses (List B)						
CHEM454	Industrial Dyes	2	2	-	*	Spectroscopy of Organic Compounds
CHEM503	Inorganic Spectroscopy	2	2	-	*	Coordination Chemistry
CHEM502	Physical Organic Chemistry	3	3	-	*	Spectroscopy of Organic Compounds
CHEM509	Organic Preparations	2	-	4	*	Spectroscopy of Organic Compounds
CHEM510	Chemistry of Natural Products	2	2	-	*	Organic Chemistry II
CHEM551	Food Chemistry	3	2	2	*	Biochemistry II
CHEM553	Nano chemistry	2	2	-	*	Surface Chemistry and Catalysis+ Solid State Chemistry
CHEM554	Colloidal Chemistry	1	1	-	*	Surface Chemistry and Catalysis
List C (Elective from other programs) (Select 2 hours)						
PHYS550	Introduction to Medical Physics	2	2	-	*	None
PHYS551	Biomaterials	2	2	-	*	None
BIOL568	Climatology	2	2	-	*	General Biology