

**College of Science**  
**Vice Dean Academic Affairs**  
**Study Plans**

# **CHEMISTRY**

# **STUDY PLAN**



**Chemistry**  
**Department**

**2018-1440H**

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First Level				Second Level				
Course	Name	Prereq.	Units	Course	Name	Prereq.	Units	
ENGL 104 or ENGL 105 or ENGL 106	English Language	None	6	ENGL 111 or ENGL 112 or ENGL 113	Specialized English Language	None	6	
MATH 101	Calculus	None	3	UNIV 101	University skills	None	3	
ENT 101	Entrepreneurship	None	1	TECH 101	Computer skills	None	3	
CHEM 101	General Chemistry	None	4	STST 101	Introduction to Statistical	None	3	
ARAB 100	Writing skills	None	2	HEL 101	Health & Fitness	None	1	
<b>Total</b>			<b>16</b>	<b>Total</b>			<b>16</b>	
Third Level				Fourth Level				
Course	Name	Prereq.	Units	Course	Name	Prereq.	Units	
MATH 211	Mathematics for Chemists	None	3 (3+2+0)	PHYS 101	General Physics (1)	None	4 (3+0+2)	
CHEM 201	General Chemistry (2)	CHEM 101	4 (3+0+2)	CHEM 223	CHEM. of Main Groups	CHEM 201	3 (3+0+0)	
CHEM 240	Organic Chemistry (1)	CHEM 101	2 (2+0+0)	CHEM 232	Chemical thermodynamics	MATH 211 CHEM 201	3 (2+0+2)	
CHEM 247	Iden. of Org. Comp.	CHEM 101	2 (0+0+4)	CHEM 241	Organic Chemistry (2)	CHEM 240	2 (2+0+0)	
CHEM 252	Fundamentals of Analytical Chemistry	CHEM 101	3 (2+0+2)	CHEM 256	Spectroscopic Analytical Methods	CHEM 252	3 (2+0+2)	
University (group A)	requirement From	None	2 (2+0+0)	University (group A)	requirement From	None	2 (2+0+0)	
<b>Total</b>			<b>16</b>	<b>Total</b>			<b>17</b>	
Fifth Level				Sixth Level				
Course	Name	Prereq.	Units	Course	Name	Prereq.	Units	
CHEM 323	CHEM. of Transition Elements	CHEM 223	3 (3+0+0)	CHEM 320	Quantum Chemistry (1)	CHEM 201 MATH 211	2 (2+0+0)	
CHEM 330	Physical Chemistry of Polymers	CHEM 232	2 (1+0+2)	CHEM 329	Inorganic Compounds Spectroscopy	CHEM 323	2 (2+0+0)	
CHEM 335	Chemical Kinetics	CHEM 232	3 (2+0+2)	CHEM 336	Physical Chemistry of Solutions	CHEM 232	3 (2+0+2)	
CHEM 344	Organic Reaction Mechanism	CHEM 241	2 (2+0+0)	CHEM 341	Heterocyclic Organic Chemistry.	CHEM 241	2 (2+0+0)	
CHEM 345	Organic Preparations	CHEM 247 CHEM 241	2 (0+0+4)	CHEM 342	Polymers and Petrochemicals.	CHEM 241	2 (2+0+0)	
CHEM 353	Electro-analytical Methods	CHEM 256	2 (1+0+2)	Elective Course From (group B or C)			4	
Elective Course From (group			2	University requirement (group A)			None	2 (2+0+0)

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C)				
University requirement From (group A)	None	2 (2+0+0)		
<b>Total</b>		<b>18</b>	<b>Total</b>	<b>17</b>

Seventh Level				Eighth Level			
CHEM 425	Inorganic Reaction Mechanism	CHEM 323	2 (2+0+0)	CHEM 421	Organometallic Chemistry	CHEM 323	2 (2+0+0)
CHEM 430	Electrochemistry	CHEM 335 CHEM 336	3 (2+0+2)	CHEM 429	Practical Inorganic Chemistry	CHEM 421 (Co-requisite)	2 (0+0+4)
CHEM 436	Surface Chemistry and Catalysis	CHEM 335	2 (2+0+0)	CHEM 457	Environmental Analysis	CHEM 353	2 (1+0+2)
CHEM 441	Organic Compounds Spectroscopy	CHEM 241	2 (2+0+0)	CHEM 499	Research Project	Finishing 116 h	3 (0+0+6)
CHEM 458	Chromatographic Separation Methods	CHEM 353	2 (1+0+2)	Elective Course From (group B or C)			6
CHEM 497	Instrumental Chemical Analysis Training	Finishing 100 h	2(0+0+4)	Free Elective Course From (group D)			3
Elective Course From (group B or C)			<b>5</b>	<b>Total</b>			<b>18</b>
<b>Total</b>			<b>18</b>				

**Group A - University Requirement: Student chooses 4 courses (8 credit hours)**

Course Code	Course Title	Pre-requisite	Credits (Lect. – Exer. - Pract.)
IC 100	Studies in the Biography of the Prophet	-	2 (2+0+0)
IC 101	Introduction of Islamic Culture	-	2 (2+0+0)
IC 102	Islam and Building up the Society	-	2 (2+0+0)
IC 103	Economic System in Islam	-	2 (2+0+0)
IC 104	Political system in Islam	-	2 (2+0+0)
IC 105	Human Rights	-	2 (2+0+0)
IC 106	Islamic Jurisprudence	-	2 (2+0+0)
IC 107	Ethics of Occupation	-	2 (2+0+0)
IC 108	Contemporary Issues	-	2 (2+0+0)
IC 109	Woman and Her Developmental Role	-	2 (2+0+0)

**Group B - Elective courses from the college (Student selects 7 credit hours)**

Course code	Course Title	Prerequisite	Credit hours
PHYS 102	General Physics (2)	None	4 (3+0+2)
ZOO 103	Principles of General Zoology	None	3 (2+0+2)
BOT 102	General Botany	None	3 (2+0+2)
MBIO 140	Microbiology	None	3 (2+0+2)
GEO 101	Physical Geology	None	4 (3+0+2)
BCH 101	Introduction to Biochemistry	None	4 (3+0+2)

**Group C - Elective courses from the department (Student selects 10 credit hours)**

Course code	Course Title	Prerequisite	Co-requisite	Credit hours
CHEM 310	Computer Applications in Chemistry	None	-	2 (2+0+0)
CHEM 326	Non-aqueous Chemistry	CHEM 323	-	1 (1+0+0)
CHEM 328	Quantum Chemistry (2)	CHEM 320	-	2 (2+0+0)
CHEM 333	Industrial Chemistry	CHEM 232	-	2 (2+0+0)
CHEM 334	Nuclear and Radiation Chemistry	CHEM 201	-	2 (2+0+0)
CHEM 422	Chemistry of Solid State	CHEM 323	-	3 (2+0+2)
CHEM 418	Bio-inorganic Chemistry	CHEM 323	-	2 (2+0+0)
CHEM 419	Industrial-inorganic Chemistry	CHEM 323	-	3 (2+0+2)
CHEM 461	Corrosion	CHEM 430	-	2 (1+0+2)
CHEM 434	Practical of polymer physical chemistry	CHEM 330	-	2 (0+0+4)
CHEM 442	Organic Industries	CHEM 342	-	2 (1+0+2)
CHEM 443	Chemistry of Natural Products	CHEM 341	-	2 (2+0+0)
CHEM 447	Advanced Practical Organic Chemistry	CHEM 345	-	2 (0+0+4)
CHEM 455	Statistical Treatment of Chemical Data	CHEM 353	-	2 (1+0+2)
CHEM 460	Green Chemistry	CHEM 336	CHEM 436	3 (2+0+2)

**Group D- optional requirements from outside the Department (free) (student chooses 3 credit hours)**

Student chooses any course (s) from outside the Department