

Kingdom of Saudi Arabia  
Ministry of Education  
Majmaah University  
College of Education - Zulfi  
Department of Chemistry  
Study plan of Chemistry program



**Table 1 Percentages' Courses**

No.	Module	Percentage
1	Education Skills	18.05%
2	General Sciences	10.41%
3	Chemical Sciences	59.02%
	Compulsory(University elective studies)	8.33%
5	Practical Training	4.16%

The portion of elective studies is 8.33 %. The student may include any courses taught at MU in the elective studies.

**Table 2 Courses Requirement**

Requirement	Type	Total credit hour	Percentage	ECST
University	Compulsory	12	8.33%	20.4
	Optional	26	-	
College	Compulsory	32	22.22%	54.4
	Optional	-	-	
Department	Compulsory	100*	69.44%	170
	Optional	-	-	
Free Courses		-	-	
Total hours and percentage		144	100%	244

**Table 3 University Requisite**

No.	Code	Course	Credit Hours				Prerequisite	Observations
			Theoretical	Practical	Training	Total		
1	SALM 101	Introduction to Islamic Culture	2	0	0	2	-----	6 Hours Selecting 3 from 4
2	SALM 102	Islam and Society	2	0	0	2	-----	
3	SALM 103	Economic System in Islam	2	0	0	2	-----	
4	SALM 104	The Basics of the Political System in Islam	2	0	0	2	-----	
5	AR AB 101	Arabic language skills	2	0	0	2	-----	2 Hours Selecting 1 from 2
6	AR AB 103	Arabic editing	2	0	0	2	-----	
7	SOCI 101	Contemporary Social Issues	2	0	0	2	-----	4 Hours Selecting 2 from 7
8	ENT 101	Business Leadership	2	0	0	2	-----	
9	FCH 101	Family and Childhood	2	0	0	2	-----	
10	HAF 101	The basics of Health and Fitness	2	0	0	2	-----	
11	LHR 101	Laws and Human Rights	2	0	0	2	-----	
12	VOW 101	Voluntary Work	2	0	0	2	-----	
13	ENG 101	English language	2	0	0	2	-----	
<b>Total Number of Credit hours</b>			<b>26</b>					

**Table 4 Compulsory College Requisites**

NO.	CODE	SUBJECT	CREDIT HOURS				Prerequisite
			Theoretical	Practical	Training	Total	
1	EDU 116	Teaching techniques and Communication skills	2	0	0	2	
2	EDU 117	Fundamentals of Islamic Education	2	0	0	2	
3	EDU 118	The System and Policy of Education in KSA	2	0	0	2	
4	EDU 126	Developmental Psychology	2	0	0	2	
5	EDU 216	Psychological Health	2	0	0	2	EDU 126
6	EDU 217	Principles of Educational Research	2	0	0	2	
7	EDU 226	Educational Psychology	2	0	0	2	EDU 126
8	EDU316	Administration and Educational Planning	2	0	0	2	
9	EDU317	Production of E-learning	2	0	0	2	EDU 116
10	EDU 326	Teaching Strategies	2	0	0	2	
11	EDU 327	Curricula	2	0	0	2	
12	EDU 416	Modern Trends in Teaching Strategies	2	0	0	2	EDU 326
13	EDU 417	Educational Evaluation	2	0	0	2	
14	EDU426	Practicum	6	0	0	6	120 Successful Hours. EDU 416 EDU 417
<b>Total Number of Credit hours</b>			<b>32</b>				

**Table 5 Compulsory Department Requisites**

No.	Code	Course	Semester F=First S=Second	Credits hours				Prerequisite
				Theoretical	Practical	Training	Total	
1	CHEM111	general chemistry (1)	F	1	1	0	2	
2	MATH 111	Calculus(1)	F	1	1	0	2	
3	PHYS 111	General physics (1)	F	1	1	0	2	
4	CHEM121	Organic chemistry (1)	S	3	1	0	4	
5	CHEM122	Inorganic chemistry ( main group elements)	S	2	0	0	2	
6	COMP125	Introduction to computer	S	2	1	0	3	
7	MATH123	Introduction to differential equations	S	2	1	0	3	MATH 111
8	STAT 101	Biostatistics	S	1	1	0	2	
9	CHEM211	Organic chemistry 2	F	3	1	0	4	CHEM121
10	CHEM212	Physical chemistry- Phase Rule	F	1	1	0	2	
11	CHEM213	General chemistry 2	F	2	1	0	3	CHEM111
12	PHYS 123	General physics 2	F	2	1	0	3	PHYS 111
13	CHEM221	Heterocyclic Compounds chemistry	S	2	2	0	4	CHEM211
14	CHEM222	Quantum Chemistry (1)	S	2	0	0	2	MATH 123
15	CHEM223	Physical organic chemistry	S	2	0	0	2	CHEM. 211
16	CHEM224	Descriptive Analytical Chemistry	S	2	1	0	3	
17	CHEM225	Electro-Reversible Chemistry 1	S	2	1	0	3	
18	CHEM311	Quantum Chemistry (2)	F	2	0	0	2	CHEM222
19	CHEM312	Thermodynamic chemistry	F	2	1	0	3	
20	CHEM314	organic chemistry (polymers and patrol)	F	2	1	0	3	CHEM 211
21	CHEM315	Quantitative Analytical Chemistry	F	2	1	0	3	CHEM224

22	CHEM316	Physical Chemistry ( Surfaces, Colloid s & Catalysis)	F	2	1	0	3	
23	CHEM321	Biochemistry 1	S	2	1	0	3	
24	CHEM322	inorganic chemistry( transition elements)	S	4	0	0	4	CHEM 122
25	CHEM323	Electro-Reversible Chemistry 2	S	3	1	0	4	CHEM 225
26	CHEM324	Coordination chemistry	S	2	1	0	3	CHEM 122
27	CHEM411	Instrumental Analysis Chemistry	F	3	1	0	4	
28	CHEM412	Kinetic Chemistry	F	2	1	0	3	CHEM 312
29	CHEM413	Dyes chemistry	F	3	1	0	4	CHEM 221
30	CHEM414	Biochemistry 2	F	2	1	0	3	CHEM 321
31	CHEM421	Natural Products Chemistry	S	2	1	0	3	CHEM221
32	CHEM 422	Chemistry of organic reactions mechanisms	S	2	0	0	2	CHEM211
33	CHEM423	organic chemistry (Organic Compounds Spectra)	S	3	1	0	4	CHEM411
34	CHEM 424	Nuclear and Radiation Chemistry	S	3	0	0	3	
<b>Total Number of EUC Credits hours</b>				<b>100 Credits hours</b>				

**Table 6 Suggested distribution of courses on levels**

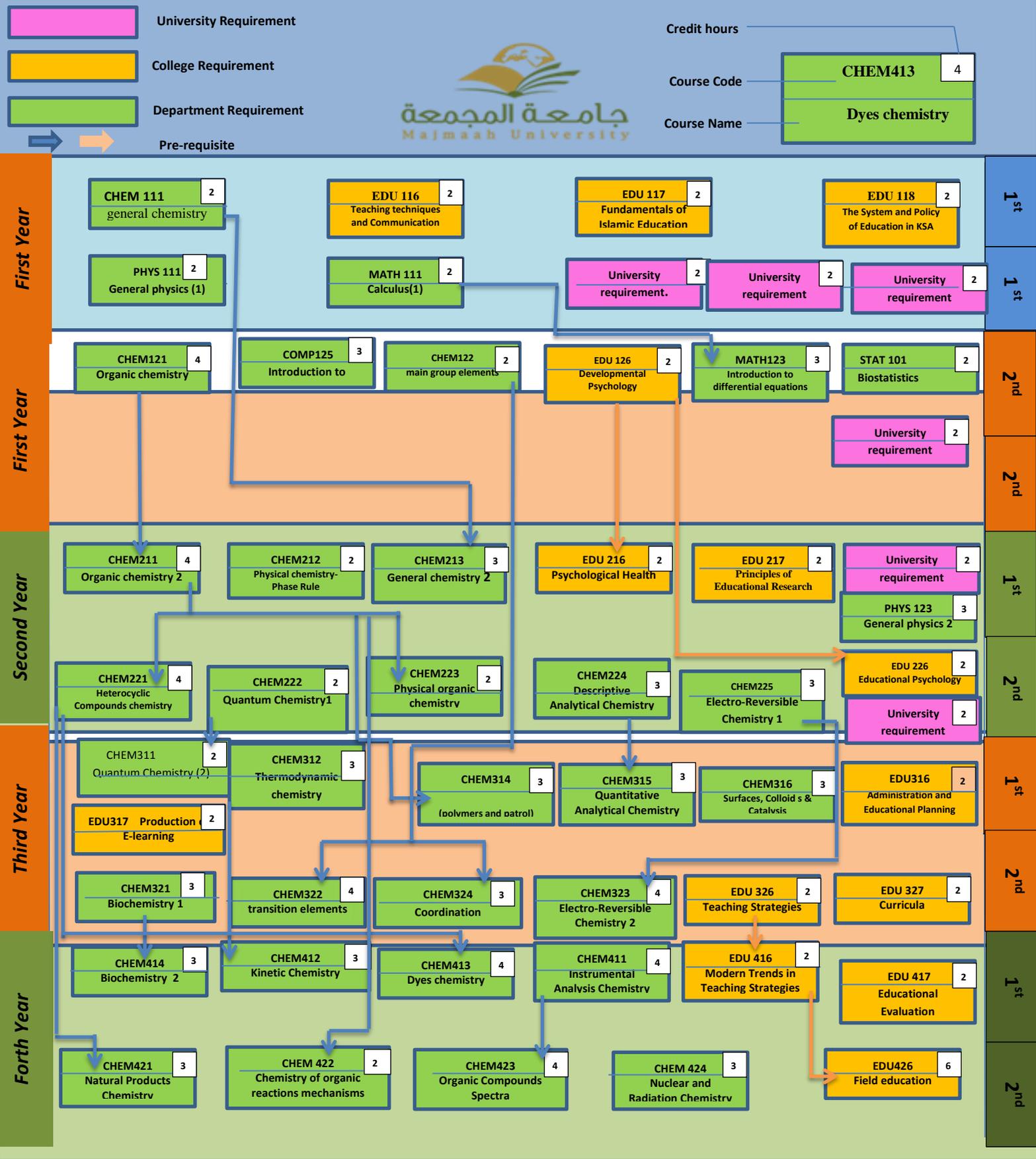
Level	Course Code	Course Title	Credit Hours	Prerequisite	College or Department
Level 1	EDU 116	general chemistry (1)	(1+1+0)2		Department
	EDU 117	Teaching techniques and Communication skills	(2+0+0)2		College
	EDU 118	Fundamentals of Islamic Education	(2+0+0)2		College
	MATH 111	The System and Policy of Education in KSA	(2+0+0)2		College
	PHYS 111	Calculus(1)	(1+1+0)2		Department
	EDU 116	General physics (1)	(1+1+0)2		Department
		University requirement	(2+0+0)2		University
		University requirement	(2+0+0)2		University
Level 2	CHEM121	Organic chemistry (1)	(3+1+0)4		Department
	CHEM122	Inorganic chemistry ( main group elements)	(2+0+0)2		Department
	COMP125	Introduction to computer	(2+1+0)3		Department
	EDU 126	Developmental Psychology	(2+0+0)2		College
	MATH123	Introduction to differential equations	(2+1+0)3	MATH 111	College
	STAT 101	Biostatistics	(1+1+0)2		Department
		University requirement	(2+0+0)2		University
Level 3	CHEM211	Organic chemistry 2	(3+1+0)4	CHEM121	Department
	CHEM212	Physical chemistry- Phase Rule	(1+1+0)2		Department
	CHEM213	General chemistry 2	(2+1+0)3	CHEM111	Department
	EDU 216	Psychological Health	(2+0+0)2	EDU 126	College
	EDU 217	Principles of Educational Research	(2+0+0)2		College
	PHYS 123	General physics 2	(2+1+0) 3	PHYS 111	Department
		University requirement	(2+0+0)2		University
Level 4	CHEM221	Heterocyclic Compounds chemistry	(2+2+0)4	CHEM211	Department
	CHEM222	Quantum Chemistry (1)	(2+0+0)2	MATH 123	Department

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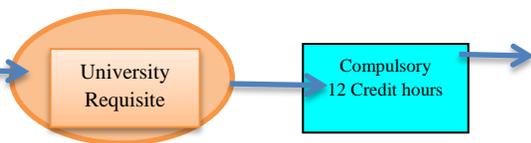
	CHEM223	Physical organic chemistry	(2+0+0)2	CHEM. 211	Department
	CHEM224	Descriptive Analytical Chemistry	(2+1+0)3		Department
	Course Code	Course Title	Credit Hours	Prerequisite	College or Department
	CHEM225	Electro-Reversible Chemistry 1	(2+1+0)3		Department
	EDU 226	Educational Psychology	(2+0+0)2	EDU126	College
		University requirement	(2+0+0)2		University
Level 5	CHEM311	Quantum Chemistry (2)	(2+0+)2	CHEM 22	Department
	CHEM312	Thermodynamic chemistry	(2+1+0)3		Department
	CHEM314	organic chemistry (polymers and patrol)	(2+1+0)3	CHEM211	Department
	CHEM315	Quantitative Analytical Chemistry	(2+1+0)3	CHEM224	Department
	CHEM316	Physical Chemistry ( Surfaces, Colloid s & Catalysis)	(2+1+0)3		Department
	EDU316	Administration and Educational Planning	(2+0+0)2		College
	EDU317	Production of E-learning	(2+0+0)2		College
Level 6	CHEM321	Biochemistry 1	(2+1+0)3		Department
	CHEM322	inorganic chemistry( transition elements)	(4+0+0)4	CHEM122	Department
	CHEM323	Electro-Reversible Chemistry 2	(3+1+0)4	CHEM 225	Department
	CHEM324	Coordination chemistry	(2+1+0)3	CHEM 122	Department
	EDU 326	Teaching Strategies	(2+0+0)2		Department
	EDU 327	Curricula	(2+0+0)2		Department
Level 7	CHEM411	Instrumental Analysis Chemistry	(3+1+0)4		Department
	CHEM412	Kinetic Chemistry	(2+1+0)3	CHEM 312	Department
	CHEM413	Dyes chemistry	(3+1+0)4	CHEM 221	Department
	CHEM414	Biochemistry 2	(2+1+0)3	CHEM 321	Department
	EDU 416	Modern Trends in Teaching Strategies	(2+0+0)2	EDU 326	College
	EDU 417	Educational Evaluation	(2+0+0)2		College
Level 8	CHEM421	Natural Products Chemistry	(2+1+0)3	CHEM221	Department
	CHEM 422	Chemistry of organic	(2+0+0)2	CHEM211	Department

		<b>reactions mechanisms</b>			
	<b>EDU426</b>	<b>Practicum</b>	<b>(0+0+6)6</b>	<b>EDU 326.416</b>	<b>College</b>
	<b>CHEM423</b>	<b>organic chemistry (Organic Compounds Spectra)</b>	<b>(3+1+0)4</b>	<b>CHEM411</b>	<b>Department</b>
	<b>CHEM 424</b>	<b>Nuclear and Radiation Chemistry</b>	<b>(3+0+0)3</b>		<b>Department</b>

## Study Plan of Chemistry Program

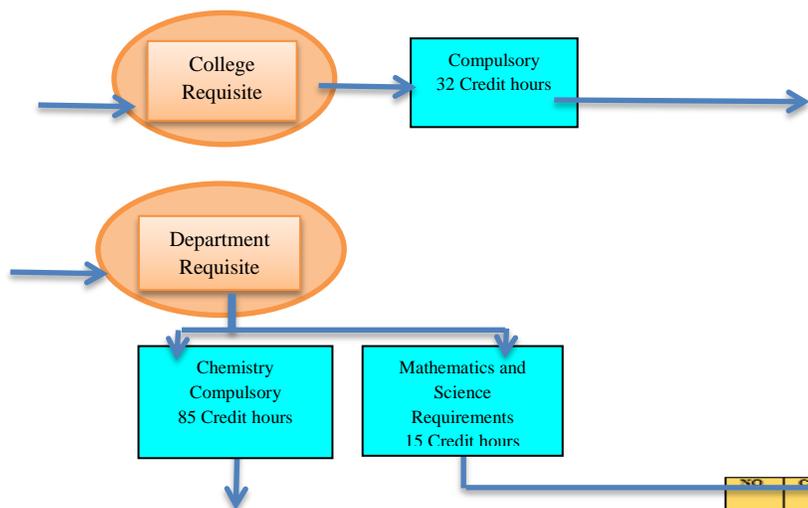


ZULFI COLLEGE OF EDUCATION  
CHEMISTRY PROGRAM



No.	CODE	SUBJECT	CREDIT HOURS	
1	SALM 101	Introduction to Islamic Culture	3	4 Hours
2	SALM 102	Islam and Society	3	
3	SALM 103	Economic System in Islam	3	
4	SALM 104	The Basics of the Political System in Islam	3	
5	AR AB 101	Arabic language skills	3	2 Hours
6	AR AB 103	Arabic editing	3	
7	SOCI 101	Contemporary Social Issues	3	4 Hours
8	ENT 101	Business Leadership	3	
9	FCH 101	Family and Childhood	3	
10	HAF 101	The basics of Health and Fitness	3	
11	LHS 101	Laws and Human Rights	3	4 Hours
12	VOW 101	Voluntary Work	3	
13	ENG 101	English language	3	
Total Number of Credit hours			36	

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NO.	CODE	SUBJECT	CREDIT HOURS
1	EDU 116	Teaching techniques and Communication skills	2
2	EDU 117	Fundamentals of Islamic Education	2
3	EDU 118	The System and Policy of Education in KSA	2
4	EDU 126	Developmental Psychology	2
5	EDU 216	Psychological Health	2
6	EDU 217	Principles of Educational Research	2
7	EDU 226	Educational Psychology	2
8	EDU316	Administration and Educational Planning	2
9	EDU317	Production of E-learning	2
10	EDU 326	Teaching Strategies	2
11	EDU 327	Curricula	2
12	EDU 416	Modern Trends in Teaching Strategies	2
13	EDU 417	Educational Evaluation	2
14	EDU426	Field education	6
Total Number of Credit hours			32

NO.	CODE	SUBJECT	CREDIT HOURS
1	CHEM111	general chemistry (1)	2
2	CHEM121	Organic chemistry (1)	4
3	CHEM122	Inorganic chemistry ( main group elements)	2
4	CHEM211	Organic chemistry 2	4
5	CHEM212	Physical chemistry- Phase Rule	2
6	CHEM213	General chemistry 2	3
7	CHEM221	Heterocyclic Compounds chemistry	4
8	CHEM222	Quantum Chemistry (1)	2
9	CHEM223	Physical organic chemistry	2
10	CHEM224	Descriptive Analytical Chemistry	3
11	CHEM225	Electro-Reversible Chemistry 1	3
12	CHEM311	Quantum Chemistry (2)	2
13	CHEM312	Thermodynamic chemistry	3

NO.	CODE	SUBJECT	CREDIT HOURS
1	MATH 111	Calculus(1)	2
2	PHYS 111	General physics (1)	2
3	COMP125	Introduction to computer	3
4	MATH123	Introduction to differential equations	3
5	STAT 101	Biostatistics	2
6	PHYS 123	General physics 2	3
Total Number of Credit hours			15

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14	CHEM314	organic chemistry (polymers and petro)	3
15	CHEM315	Quantitative Analytical Chemistry	3
16	CHEM316	Physical Chemistry ( Surfaces, Colloid & Catalysis)	3
17	CHEM321	Biochemistry 1	3
18	CHEM322	inorganic chemistry( transition elements)	4
19	CHEM323	Electro-Reversible Chemistry 1	4
20	CHEM324	Coordination Chemistry	3
21	CHEM411	Instrumental Analysis Chemistry	4
22	CHEM412	Kinetic Chemistry	3
23	CHEM413	Lysis chemistry	4
24	CHEM414	Biochemistry 2	3
25	CHEM421	Natural Products Chemistry	3
26	CHEM 422	Chemistry of organic reactions mechanisms	2
27	CHEM423	organic chemistry (Organic Compounds Spectra)	4
28	CHEM 424	Nuclear and Radiation Chemistry	3
Total Number of Credit hours			85



