



JORDAN UNIVERSITY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF CHEMISTRY
Academic Program
BSc in Chemistry (2018/2019)

CURRICULUM PLAN

Requirements	Compulsory Credit hours	Elective credit hours	Total
University Requirements	16	9	25
Faculty Requirements	19	-	19
Department Requirements	79	9	88
Total	114	18	132

1. University Requirements: 25 Credit Hours as Follows:

A. Compulsory Requirements: 16 Credit Hours As Follows:

Course No.	Course	Credit hours	Theoretical hours	Pre- requisites
ARB 101	Arabic Language	3	3	
ENG 112	English Language (2)	3	3	ENGL 099 or pass in University English exam
HSS 110	Social Responsibility	3	3	
HSS 119	Entrepreneurship and Innovation	2	2	
HSS 129	General skills	2	2	
MS 100*	Military Sciences	3	3	

* Required from Jordanian students only. Results recorded as pass or fail.

B. Elective requirements: 9 credit hours selected from the following courses

Group 1: 3 credit hours ONLY from the following courses

Course No.	Course	Credit hours
ARB200	Appreciation of Literary Text	3
HSS 115	Islam and Recent problems	3
HSS 116	Economic System in Islam	3
HSS 121	Principles of Sociology	3
HSS 126	Principles in Psychology	3
HSS 127	Educational Technology	3
HSS 131	Islam Civilizations	3
HSS 132	The history of the City of Jerusalem	3
HSS 133	Civilization and Recent Cultures	3
HSS 135	Islamic Culture	3
HSS 137	Islamic Rights	3
HSS 161	Contemporary Problems	3
HSS 211	Sociology	3

HSS 213	Individual and Society	3
HSS 231	History of Sciences in Islam	3
HSS 251	X	3

Group 2: 3 credit hours ONLY from the following courses

Course No.	Course	Credit hours
CHE 191	Introduction to Nanotechnology	3
ME 102	Introduction to Renewable Energy	3
AP 200	Farm Animal Products (for Non-Animal Production, Nutrition and Food Technology Students)	3
PP 200	Home Gardens (For Non-plant Production, Soil and Irrigation Students)	3
PP 201	Beekeeping (For Non-plant Production Students)	3
PP 202	Natural Plants of Jordan (For non-Agriculture Students)	3
NF 177	Food Preservation "In English" (For Non-Nutrition and Food Technology)	3
NR 200	Natural Resources and Human (For Non-Plant Production, Soil and Irrigation Students)	3
NR 207	Earth Problems and Solutions (For Non-Plan Productions and Soil Irrigation Students)	3
ES 103	Environment Protection (For Non-Environmental Science Students)	3
NE 200	Principles in Nuclear Energy and Its Peaceful Applications	3

Group 3: 3 credit hours ONLY from the following courses

Course No.	Course	Credit hours
PH 104	Community Health and Nutrition	3
NUR 100	Health Promotion (Non-Medicine, Nursing and Midwifery)	3
NUR 109	Family Health	3
ADS 100	Oral and Dental Health	3
VM 211	Animal Health	3
VM 212	Pet animal Care	3
VM 213	Animal Behavior and Welfare	3
VM 214	Animal Products and Public Health (For Non-Veterinary and Agriculture Students)	3
PT 100	Wellness and Lifestyle (Not for Physical and Occupational Therapy)	3
OT 100	Disability and the Society (Not Allowed for Rehabilitation Science Dept. Students)	3

2. Faculty Requirements: 19 Credit Hours as Follows:

Course No.	Course	Credit hours	Theoretical hours	Practical hours	Pre- Requisites
MATH 101	Calculus I	3	3	-	
MATH 102	Calculus II	3	3	-	MATH 101
PHYS 101	General Physics I	3	3	-	
PHYS 102	General Physics II	3	3	-	PHYS 101
PHYS 107	General Physics Lab.	1	-	2	PHYS 102 or concurrent
CS 115	Programming in C++	3	2	3	-
MATH 131	Elements of Statistics	3	3	-	MATH 102

3. Department requirements: 88 credit hours as follows:

A) Compulsory Courses: 79 Credit Hours As Follows:

Course No.	Course	Credit hours	Theoretical hours	Practical hours	Pre- requisites
CHEM 101	General Chemistry I	3	3	-	-
CHEM 102	General Chemistry II	3	3	-	CHEM 101 Pass
CHEM 107	General Chemistry Lab.	1	-	2	CHEM 102 or concurrent
BIO 103	General Biology	3	3	-	-
BIO 107	General Biology Lab.	1	-	2	BIO 103 or concurrent
CHEM 111	Organic Chemistry I	3	3	-	CHEM 101 pass
CHEM 113	Organic Chemistry Lab (1)	1	-	3	CHEM 107 pass CHEM 111 concurrent
CHEM 201	Chemical Safety and Ethics	2	2	-	-
MATH 203	Differential Equations	3	3	-	MATH 102
CHEM 212	Organic Chemistry II	3	3	-	CHEM 111 pass
CHEM 214	Organic Chemistry Lab (2)	1	-	3	CHEM 113 Pass CHEM 212 concurrent
CHEM 222	Inorganic Chemistry I	3	3	-	CHEM 102 pass
CHEM 233	Analytical Chemistry	3	3	-	CHEM 102 pass
CHEM 234	Analytical Chemistry Lab.	1	-	3	CHEM 107 pass CHEM 233 concurrent
CHEM 247	Physical Chemistry I	3	3	-	CHEM 102 pass & MATH 102 pass
CHEM 248	Physical Chemistry lab. I	1	-	3	CHEM 107 pass CHEM 247 concurrent
CHEM 262	Biochemistry	3	3	-	Bio 103 pass & CHEM 212 pass
CHEM 266	Biochemistry lab	1	-	2	CHEM 107 pass CHEM 262 concurrent
CHEM 311	Organic Chemistry III	3	3	-	CHEM 212 pass
CHEM 312	Spectroscopic Identification of organic compounds	2	2	-	CHEM 311 or concurrent
CHEM 314	Advanced Organic Chemistry Lab	1	-	3	CHEM 312 concurrent
CHEM 321	Inorganic Chemistry II	3	3	-	CHEM 222 pass
CHEM 325	Inorganic Chemistry Lab.	1	-	4	CHEM 107 pass CHEM 321 or concurrent
CHEM 336	Principles of Chemical Instrumentation	3	3	-	CHEM 233 Pass & CHEM 321 pass
CHEM 337	Principles of Chemical Instrumentation Lab.	1	-	3	CHEM 234 pass CHEM 336 concurrent
CHEM 347	Physical Chemistry II	3	3	-	PHYS 102 pass & CHEM 247 pass
CHEM 348	Physical Chemistry lab. II	1	-	3	CHEM 248 pass CHEM 347 concurrent
CHEM 352	Industrial Inorganic Chemistry	2	2	-	CHEM 321 pass
CHEM 353	Industrial Inorganic Chemistry Lab.	1	-	3	CHEM 325 pass CHEM 352 concurrent
CHEM 391	Literature Seminar	1	1	-	CHEM 311 pass
CHEM 411	Chemistry of Natural Products	2	2	-	CHEM 312 pass

CHEM 423	Organometallic and Organo metalloid Compounds	3	3	-	CHEM 321 pass
CHEM 437	Chemical Separation Methods	2	2	-	CHEM 336 pass
CHEM 447	Physical Chemistry III	3	3	-	CHEM 347 pass & MATH 203 pass
CHEM 451	Industrial Organic Chemistry	2	2	-	CHEM 311 pass
CHEM 456	Industrial Organic Chemistry Lab.	1	-	4	CHEM 214 pass CHEM 451 concurrent
CHEM 458	Petrochemicals	2	2	-	CHEM 311 or concurrent
CHEM 493	Graduation Project	3	1	12	Exceeds 90 hours

B) Elective courses: 9 credit hours as follows:

Course No.	Course	Credit hours	Theoretical hours	Practical hours	Pre-requisites
CHEM 302	Application of Computer in Chemistry	2	1	3	CHEM 247
CHEM 426	Advanced Synthesis of Inorganic Compounds	2	1	3	CHEM 325
CHEM 431	Chemistry of Toxicology	2	2	-	CHEM 336
CHEM 432	Forensic Chemistry	3	3	-	CHEM 336 pass & CHEM 262 pass
CHEM 438	Industrial Analytical Chemistry	2	2	-	CHEM 336 pass & CHEM 337 pass
CHEM 439	Industrial Analytical Chemistry lab.	1	-	3	CHEM 438 or concurrent
CHEM 442	Applied Electrical Chemistry	3	3	-	CHEM 347 pass
CHEM 449	Quantum Chemistry	3	3	-	CHEM 447 Pass
CHEM 457	Chemistry of Food Industry	2	2	-	CHEM 262 pass
CHEM 464	Medicinal Chemistry	3		3	CHEM 262 Pass
CHEM 465	Bio-analytical Chemistry	3	3	-	CHEM 336 pass & CHEM 262 pass
CHEM 466	Bio-inorganic Chemistry	3	3	-	CHEM 321 pass & CHEM 262 pass
CHEM 472	Surface Chemistry & Catalysis	3	3	-	CHEM 321 pass
CHEM 473 A	Special Topics in Chemistry A	3	3	-	Dept. Approval
CHEM 473 B	Special Topics in Chemistry B	2	2	-	Dept. Approval
CHEM 474	Polymer Chemistry	3	3	0	CHEM 311 pass & CHEM 347 pass
CHEM 481	Nano-Science Chemistry	3	3	-	CHEM 311 pass & CHEM 347 pass
CHEM 492	Laboratory Research Project	2	-	8	Exceeds 100 Credit hours with <u>GPA > 3</u>

Course Code in the Second Digit of Course Numbering in Chemistry Courses

Course	Course Code	Course	Course Code
General Chemistry	0	Industrial Chemistry	5
Organic Chemistry	1	Biochemistry	6
Inorganic Chemistry	2	Special Topics	7
Analytical Chemistry	3	Nanoscience	8
Physical Chemistry	4	Research	9