



Curriculum for the Bachelor Degree in Chemical Industries Engineering 2020



Established 1997

Curriculum of Bachelor Degree in Chemical Industries Engineering

The curriculum for the B.Sc. degree in Chemical Industries Engineering constitutes (162) credit hours that are distributed as follows: -

	Requirements	Credit Hours
First	University Requirements	24
	Compulsory	18
	Elective	6
Second	Faculty Requirements	32
Third	Specialization Requirements	95
	Compulsory	86
	Elective	9
Fourth	Supportive Specialization Requirements	11
Total		162



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Summary	
Courses Types	Credit Hours
Theoretical	137
Practical	18
Field Training	3 (Equivalent of 280 Hours of Field Training)
Projects	4
Total	162

Specialization Fields

Fields Category	Fields Code
Basics Engineering Sciences	0
Basics of Chemical Engineering and Engineering Materials	1
Technology and Applied Chemical Engineering	2
Transport Phenomena	3
Thermodynamics and Reaction Engineering	4
Separation and Unit Operations	5
System Analysis, Design, Modeling and Control	6
Environment and Industrial Safety	7
Biochemical & Environmental Engineering	8
Field Training, Graduation Projects & Special Topics	9

Course Number Coding: Coding follows the standards applied in Al-Balqa Applied University. The code is read from left to right.

Specialty Code	Course Number			
	Subspecialty Code	Year Sequence	Course Field Code	Semester
CHE	1 (Zero for common courses)	1-5	0-9	Odd number (1 st Semester) Even Number (2 nd Semester)



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First: University Requirement (24 Cr. Hrs.)

A- Compulsory University Requirements (18 Cr. Hrs.):

Course No.	Course	Cr. Hrs.	Weekly Hrs.		Prerequisite
			Lec.	Lab.	
AAL101	Applied Arabic Language	3	3	-	301501199
AEL101	Applied English Language 1	3	3	-	301502099 Or 35005099
AEL102	Applied English Language 2	3	3	-	AEL101
NE101	National Education and University Behavior	3	3	-	-
35001101	Military Science	3	3	-	Passing 90 Cr. Hr.
CS 101	Computer Skills and Distance Learning	1	1	-	35005099
IEC101	Innovation, Leadership and Creativity	2	2	-	-
Total		18	18	-	

B- Elective University Requirements: (6 Cr. Hrs.)

The student can select (6 Cr. Hrs.) from the University elective courses offered by other departments:

Course No.	Course	Credit Hours
36001101	Communication Skills	3
36002102	Introduction to Psychology	3
36003103	Jordan Society	3
36004104	Sport for All	3
36005105	Islamic Culture	3
36009111	Economic Concepts	3
36006106	Administration and Economic Concepts	3
36007107	Agriculture in Jordan	3
36008108	Environment and Society	3
36012109	Orthodox Caliphs History	3
36009114	Jerusalem (Palestinian issue)	3
36009112	Law, Media, and Society	3
36009109	Islam and Life	3
36009115	Digital Community	3
Total		6



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Second: Faculty Requirements: (32 Cr. Hrs.):

Course No.	Course	Cr. Hrs.	Weekly Hrs.		Prerequisite
			Lec.	Lab.	
30202101	Calculus (1)	3	3	-	-
30202102	Calculus (2)	3	3	-	30202101
30201101	Physics (1)	3	3	-	-
30201102	Physics (2)	3	3	-	30201101
30201111	Physics Laboratory (1)	1	-	3	30201101
30306101	Chemistry (1)	3	3	-	-
30206102	Chemistry Laboratory (1)	1	-	3	30206102 or Co-requisite
30202203	Differential Equations	3	3	-	30202102
BSE 0102	Engineering Workshops	1	-	3	-
BSE 0201	Programming for Engineers	3	2	3	CS 101
BSE 0203	Technical Writing and Work Ethics	3	3	-	AEL102
BSE 0205	Engineering Drawing	2	-	6	CS 101
BSE 0401	Engineering Economics	3	3	-	Passing 80 Cr. Hrs.
Total		32	26	18	

Third: Specialization Requirements: (95 Cr. Hrs.)

A- Compulsory Requirements (86 Cr. Hrs.):

Course No.	Course	Cr. Hrs.	Weekly Hrs.		Prerequisite
			Lec.	Lab.	
CHE 0211	Chemical Engineering Principles	3	3	-	30206101
CHE 0212	Material and Energy Balances	3	3	-	CHE 0211
CHE 0234	Chemical Engineering Fluid Mechanics	3	3	-	30202203
CHE 0242	Thermophysical Chemistry	3	3	-	CHE 0211
CHE 0331	Chemical Engineering Fluid Mechanics Laboratory	1	-	3	CHE 0234
CHE 0333	Heat Transfer Processes	3	3	-	CHE 0234
CHE 0334	Heat Transfer Processes Laboratory	1	-	3	CHE 0333
CHE 0336	Mass Transfer	3	3	-	CHE 0333+ CHE 0341
CHE 0341	Chemical Engineering Thermodynamics	3	3	-	CHE 0242
CHE 0342	Chemical Engineering Thermodynamics Laboratory	1	-	3	CHE 0341
CHE 0345	Chemical Reaction Engineering (1)	3	3	-	CHE 0212
CHE 0346	Chemical Reaction Engineering (2)	3	3	-	CHE 0345
CHE 0352	Unit Operations	3	3	-	CHE 0333
CHE 0441	Chemical Reaction Engineering Laboratory	1	-	3	CHE 0346
CHE 0451	Unit Operations Laboratory	1	-	3	CHE 0352
CHE 0453	Separation Processes	3	3	-	CHE 0336
CHE 0454	Separation Processes Laboratory	1	-	3	CHE 0453
CHE 0461	Modeling & Simulation in Chemical Engineering	3	3	-	CHE 0346
CHE 0462	Process Simulation Laboratory.	1	-	3	CHE 0461
CHE 0464	Plants Management	3	3	-	CHE 0352
CHE 0483	Bioprocess Engineering	3	3	-	CHE 0346
CHE 0490	Engineering Field Training**	3	-	280	Passing 115 Cr. Hr.
CHE 0561	Process Dynamics and Control	3	3	-	CHE 0461
CHE 0562	Process Dynamics and Control Laboratory	1	-	3	CHE 0561
CHE 0563	Chemical Process Equipment Design	3	3	-	CHE 0461

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CHE 0566	Chemical Plant Design	3	3	-	CHE 0563
CHE 0578	Chemical Process Safety Engineering	3	3	-	CHE 0561
CHE 0591	Graduation Project (1)	1	1	-	Passing 120 Cr. Hr.
CHE 0592	Graduation Project (2)	3	3	-	CHE 0591
CHE 1411	Material and Corrosion Engineering	3	3	-	CHE 0336
CHE 1424	Petroleum Refining	3	3	-	CHE 0453
CHE 1426	Chemical Industries Technologies (1)	3	3	-	CHE 0336
CHE 1523	Chemical Industries Technologies (2)	3	3	-	CHE 1426
CHE 1525	Petroleum Laboratory	1	-	3	CHE 1424
CHE 1528	Processes & Industrial Technology Laboratory	1	-	3	CHE 1571
CHE 1571	Water & Wastewater Treatments	3	3	-	CHE 0453
Total		86	73	310	

(**) The student must **Pass 115 Cr. Hrs.** to conduct field training (*Every (280) hours of field training are equivalent to 3 Cr. Hrs.*).

B- Specialty Elective Requirements: (9 Cr. Hrs.) to be selected from the following list:

Course No.	Course	Cr. Hrs.	Weekly Hrs. Lec.	Weekly Hrs. Lab.	Prerequisite
CHE 1422	Food Engineering	3	3	-	CHE 0352
CHE 1428	Polymer Science and Technology	3	3	-	CHE 0345
CHE 1462	Computer Applications in Chemical Engineering	3	3	-	CHE 0461
CHE 1518	Electrochemical Engineering	3	3	-	CHE 0336
CHE 1521	Pharmaceutical Industries	3	3	-	CHE 0483
CHE 1524	Petrochemicals Technology	3	3	-	CHE 1424
CHE 1526	Oil shale Technology	3	3	-	CHE 0352
CHE 1527	Nanotechnology in Chemical Engineering	3	3	-	CHE 1411
CHE 1529	Compounded Fertilizers Technology	3	3	-	CHE 1426
CHE 1543	Catalysis Engineering	3	3	-	CHE 0346
CHE 1551	Membrane Separation Processes	3	3	-	CHE 0336
CHE 1572	Hydrometallurgy	3	3	-	CHE 0453
CHE 1599	Special Topics in Chemical Engineering	3	3	-	Passing 120 Cr. Hr.
Total		9	9	-	

Fourth: Supportive Requirements (12 Cr. Hrs.)

Course No.	Course	Cr.H.	Weekly Hours Lecture	Weekly Hours Lab.	Prerequisite
30206221	Organic Chemistry	3	3	-	30206101
30206222	Organic Chemistry Laboratory	1	-	3	30206221
30206231	Analytical & Instrumental Chemistry	3	3	-	30206101
30206232	Analytical and Instrumental Chemistry Lab.	1	-	3	30206231
BSE 0306	Numerical Techniques	3	3	-	30202102
Total		11	9	6	