UNDERGRADUATE COURSES

Curriculum for the Degree of Bachelor of Science in Chemical Engineering: Petrochemical Industries

COURSE CODE	COURSE TITLE	CREDITS
Semester I (Fall)		
19101	Calculus I	4
21101	General Chemistry I	3
21102	General Chemistry Lab.	1
20101	Physics (Mechanics)	2
24101	General Workshop	1
-	General Courses	6
Semester II (Spring)		
19102	Calculus II	4
21103	General Chemistry II	3
20103	Physics of Heat	2
20111	Physics of Heat Lab.	1
21116	Organic Chemistry	4
21112	Organic Chemistry Lab I	1
28110	Engineering Graphics	2
-	General Courses	1
Semester III (Fall)		
19201	Differential Equations	3
20203	Physics of Electricity	2
20211	Physics of Electricity Lab	1
14202	Material & Energy Balance	4
18150	Computer Programming	3
21131	Analytical Chemistry	3
-	General Courses	2
Semester IV (Spring)		
19202	Engineering Mathematics	3
14231	Fluid Mechanics for Chemical Engineering	4
14221	Thermodynamics for Chemical Engineering I	3
21231	Analytical Chemistry Lab	1
17218	Fundamentals of Electrical Engineering	3
-	General Courses	3
Semester V (Fall)		
14322	Thermodynamics for Chemical Engineering II	3
14325	Heat Transfer I	3
14232	Fluid Mechanics Lab	1
21273	Physical Chemistry for Chemical Engineering	4
14401	Kinetics & Reactor Design	4
-	General Courses	2
Semester VI (Spring)		
14341	Mass Transfer	3
14409	Process Control	3
14331	Heat Transfer Lab	1
21274	Physical Chemistry for Chemical Engineering Lab	1
16205	Statics & Strength of Materials	3
-	Elective Courses	3
-	General Courses	4
Semester VII (Fall)		
14335	Heat Transfer II	3
14455	Applied Mathematics in	3

	Chemical Engineering	
14410	Process Control Lab	1
14345	Unit Operations I	3
14450	Petrochemical Processes	3
-	Elective Courses	3
-	General Courses	2
Semester VIII (Spring)		
14344	Unit Operation Lab	2
14400	Plant Design & Economics	3
14350	Unit Operations II	3
14478	Project	3
14258	Industrial Training	2
-	Elective Courses	4

Elective Courses:

14606	Industrial Water Treatment	3
14766	Transport Phenomena	3
14512	Corrosion in Petroleum Industry	2
14351	Introduction to Refinery Engineering	3
14353	Petroleum Lab	1
14414	Polymer Chemistry & Technology	3
14405	Reactor Design for Hetrogeneous Systems	3
14360	Unit Operation Design	3
14240	Principles of Environmental Engineering	3
14705	Multicomponent Distillation	3
14255	Water Analysis Lab	1

UNDERGRADUATE COURSES

Curriculum for the Degree of Bachelor of Science in Chemical Engineering: Polymer Industries

COURSE CODE	COURSE TITLE	CREDITS
Semester I (Fall)		
19101	Calculus I	4
21101	General Chemistry I	3
21102	General Chemistry Lab.	1
20101	Physics (Mechanics)	2
24101	General Workshop	1
-	General Courses	4
Semester II (Spring)		
19102	Calculus II	4
21103	General Chemistry II	3
20103	Physics of Heat	2
20111	Physics of Heat Lab.	1
21116	Organic Chemistry	4
21112	Organic Chemistry Lab I	1
28110	Engineering Graphics	2
-	General Courses	1
Semester III (Fall)		
19201	Differential Equations	3
20203	Physics of Electricity	2
20211	Physics of Electricity Lab	1
14202	Material & Energy Balances	4
18150	Computer Programming	3
21131	Analytical Chemistry	3
-	General Courses	2
Semester IV (Spring)		
19202	Engineering Mathematics	3
14231	Fluid Mechanics for Chemical Engineering	4
14221	Thermodynamics for Chemical Engineering I	3
14521	Chemistry & Kinetics of Polymerization	3
21231	Analytical Chemistry Lab	1
17218	Fundamentals of Electrical Engineering	3
Semester V (Fall)		
14322	Thermodynamics for Chemical Engineering II	3
14325	Heat Transfer I	3
14232	Fluid Mechanics Lab	1
21273	Physical Chemistry for Chemical Engineering	4
14522	Physical Chemistry of Polymers	2
14523	Polymer Chemistry Lab	1
14401	Kinetics & Reactor Design	4
Semester VI (Spring)		
14341	Mass Transfer	3
14409	Process Control	3
14331	Heat Transfer Lab	1
21274	Physical Chemistry for Chemical Engineering Lab	1
16205	Statics & Strength of Materials	3
14524	Rehology of Polymers	3
-	General Courses	4
Semester VII (Fall)		
14455	Applied Mathematics in	3

	Chemical Engineering	
14410	Process Control Lab	1
14345	Unit Operations I	3
14525	Mechanophysical Properties of Polymers	3
14526	Polymer Physical & Mechanical Properties Lab	1
-	General courses	5
Semester VIII (Spring)		
14344	Unit Operation Lab	2
14400	Plant Design & Economics	3
14478	Project	3
14258	Industrial Training	2
-	Elective Courses	6
-	General courses	2

Elective Courses:

14422	Rubber & Plastic Technology	4
14527	Principles of Polymerization Engineering	3
14528	Composites & Additives Technology	2
14540	Modeling & Design of Polymerization Reactors	3

UNDERGRADUATE COURSES

Curriculum for the Degree of Bachelor of Science in Chemical Engineering: Biotechnology

COURSE CODE	COURSE TITLE	CREDITS
Semester I (Fall)		
19101	Calculus I	4
21101	General Chemistry I	3
21102	General Chemistry Lab.	1
20101	Physics (Mechanics)	2
24101	General Workshop	1
-	General Courses	6
Semester II (Spring)		
19102	Calculus II	4
21103	General Chemistry II	3
20103	Physics of Heat	2
20111	Physics of Heat Lab.	1
21116	Organic Chemistry	4
21112	Organic Chemistry Lab I	1
28110	Engineering Graphics	2
-	General Courses	1
Semester III (Fall)		
19201	Differential Equations	3
20203	Physics of Electricity	2
20211	Physics of Electricity Lab	1
14202	Material & Energy Balance	4
18150	Computer Programming	3
21131	Analytical Chemistry	3
-	General Courses	2
Semester IV (Spring)		
19202	Engineering Mathematics	3
14231	Fluid Mechanics for Chemical Engineering	4
14221	Thermodynamics for Chemical Engineering I	3
21231	Analytical Chemistry Lab	1
1410260	Microbiology	3
1410261	Microbiology Lab.	1
-	General Courses	3
Semester V (Fall)		
14322	Thermodynamics for Chemical Engineering II	3
14325	Heat Transfer I	3
14232	Fluid Mechanics Lab	1
21273	Physical Chemistry for Chemical Engineering	4
14401	Kinetics & Reactor Design	4
1410262	Biochemistry	3
-	General Courses	2
Semester VI (Spring)		
14341	Mass Transfer	3
14409	Process Control	3
14331	Heat Transfer Lab	1
21274	Physical Chemistry for Chemical Engineering Lab	1
1410360	Biotechnology and Fermentation	3
-	General Courses	4
Semester VII (Fall)		
14335	Heat Transfer II	3

14455	Applied Mathematics in Chemical Engineering	3
14410	Process Control Lab	1
14345	Unit Operations I	3
14450	Petrochemical Processes	3
1410361	Biotechnology Lab.	1
-	Elective Courses	3
-	General Courses	3
14478	Project	3

Semester VIII (Spring)

14344	Unit Operation Lab	2
14400	Plant Design & Economics	3
14350	Unit Operations II	3
-	Elective Courses	3
14258	Industrial Training	2
-	Elective Courses	3

Elective Courses:

-	Industrial Water Treatment	3
-	Bioseparation	3
-	Enzyme Kinetics and Technology	3
-	Experimental Design & data Analysis	3