

ENGINEERING AND INFORMATICS IN CHEMICAL AND BIOCHEMICAL PROCESSES

FIRST YEAR CURRICULA

SEMESTER I

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
1	Mathematics I	UPB.11.F.01.O.001	3	2	0	0	6	E
2	Analytical Chemistry	UPB.11.D.01.O.002	3	0	4	0	7	E
3	Inorganic Chemistry I	UPB.11.D.01.O.003	3	2	2	0	7	E
4	Computers and Industrial Graphics	UPB.11.F.01.O.004	2	0	2	0	5	E
5	Micro and Macroeconomy	UPB.11.C.01.O.005	2	1	0	0	3	V
TOTAL compulsory disciplines (O)			13	5	8	0	28	
Optional disciplines (A)								
6	Foreign Language I/ Foreign Language II	UPB.11.C.01.O.006	0	2	0	0	2	V
TOTAL optional disciplines (A)			0	2	0	0	2	
TOTAL compulsory (O) and optional (A) disciplines			13	7	8	0	30	
Facultative disciplines (L)								
7	Basics in Chemistry	UPB.11.F.01.L.007	0	2	0	0	2	V
8	Sport	UPB.11.F.01.L.008	0	2	0	0	2	V
9	Basics in Physics	UPB.11.F.01.L.009	0	2	0	0	1	V
10	Basics in Mathematics	UPB.11.F.01.L.010	0	2	0	0	1	V
TOTAL facultative disciplines (L)			2	2	0	0	6	

SEMESTER II

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
11	Mathematics II	UPB.11.F.02.O.011	3	1	0	0	5	E
12	Instrumental Analytical Techniques	UPB.11.D.02.O.012	3	0	4	0	7	E
13	Inorganic Chemistry II	UPB.11.D.02.O.013	3	0	2	0	5	E
14	Physics I	UPB.11.F.02.O.014	2	1	0	0	4	E
15	Chemistry of Transition Metals	UPB.11.F.02.O.015	2	1	0	0	4	E
16	Elements of Mechanics and Mechanical Engineering	UPB.11.D.02.O.016	2	1	0	0	3	V
TOTAL compulsory disciplines (O)			15	4	6	0	28	
Optional disciplines (A)								
17	Computers and Industrial Graphics/Computers Science	UPB.11.F.02.O.017	0	0	3	0	2	V
TOTAL optional disciplines (A)			0	0	0	0	0	
TOTAL compulsory (O) and optional (A) disciplines			15	4	9	0	30	
Facultative disciplines (L)								
18	European Integration Concepts	UPB.11.F.02.L.016	1	1	0	0	2	V
19	Pedagogy I	UPB.11.F.02.L.017	2	2	0	0	5	E
20	Sport	UPB.11.C.02.L.017	0	1	0	0	1	V
TOTAL facultative disciplines (L)			3	4	0	0	8	

SECOND YEAR CURRICULA

SEMESTER I

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
1	Physics II	UPB.11.F.03.O.001	2	1	0	0	4	E
2	Organic Chemistry	UPB.11.F.03.O.002	2	2	0	0	5	E
3	Physical Chemistry	UPB.11.F.03.O.003	3	0	4	0	7	E
4	Ecology and Sustainable Development	UPB.11.D.03.O.004	3	0	3	0	6	E
5	Basics in Electrical Engineering and Electronics	UPB.11.D.03.O.005	2	0	0	0	2	V
6	Management	UPB.11.D.03.O.006	1	1	0	0	2	V
7	Communication Techniques	UPB.11.C.03.O.007	1	1	0	0	2	V
TOTAL compulsory disciplines (O)			14	5	7	0	28	
Optional disciplines (A)								
8	Optional discipline I (Organometallic Compounds/ Chemical Sensors and Biosensors)	UPB.11.F.03.O.008	2	0	0	0	2	V
TOTAL optional disciplines (A)			2	0	0	0	2	
TOTAL compulsory (O) and optional (A) disciplines			16	5	7	0	30	
Facultative disciplines (L)								
9	Pedagogy II	UPB.11.U.03.L.009	0	0	2	0	2	V
10	Sport	UPB.11.C.03.L.010	0	1	0	0	1	V
TOTAL facultative disciplines (L)			0	1	2	0	3	

SEMESTER II

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
11	Organic chemistry	UPB.11.D.04.O.010	2	2	3	0	7	E+V
12	Physical chemistry	UPB.11.D.04.O.011	2	0	2	0	5	E
13	Basics in Chemical Engineering	UPB.11.D.04.O.012	3	0	2	0	6	E
14	Materials Science I - Inorganic materials	UPB.11.D.04.O.013	3	0	2	0	5	E
15	Materials Science II - Organic and Composite Materials	UPB.11.D.04.O.014	3	0	2	0	5	E
TOTAL compulsory disciplines (O)			13	2	11	0	28	
Optional disciplines (A)								
16	Optional discipline II (Colloidal Phenomena/Physical-Chemical Properties of Materials)	UPB.11.F.04.O.015	2	0	0	0	2	V
TOTAL optional disciplines (A)			2	0	0	0	2	
TOTAL compulsory (O) and optional (A) disciplines			15	2	11	0	30	
Facultative disciplines (L)								
17	Methods of Teaching Specialized Matters	UPB.11.U.04.L.016	2	2	0	0	5	E
18	Sport	UPB.11.C.04.L.017	0	1	0	0	1	V
TOTAL facultative disciplines (L)			2	3	0	0	6	

THIRD YEAR CURRICULA

SEMESTER I

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
1	Numerical Methods in Chemical and Biochemical Engineering	UPB.11.S.05.O.501	2	0	2	0	5	E
2	Scientific Computation Software	UPB.11.F.05.O.502	1	0	1	0	3	E
3	Electrochemistry	UPB.11.D.05.O.503	3	0	2	0	5	E
4	Organic Chemistry	UPB.11.D.05.O.504	2	1	0	0	3	E
5	Physical Chemistry	UPB.11.D.05.O.505	2	0	2	0	4	E
6	Heat Transfer	UPB.11.S.05.O.506	2	1	1	0	4	E
TOTAL compulsory disciplines (O)			14	3	9	0	28	
Optional disciplines (A)								
7	Industrial Management/Marketing	UPB.11.D.05.O.507	1	0	1	0	2	V
8	Hydrodynamic Processes/Real flow	UPB.11.S.05.O.508	2	1	1	0	4	V
TOTAL optional disciplines (A)			1	0	1	0	0	
TOTAL compulsory (O) and optional (A) disciplines			15	0	10	0	30	
Facultative disciplines (L)								
9	Advanced Computer Use	UPB.11.T.05.L.309	0	0	2	0	2	V
10	<i>Teaching practice I</i>	UPB.11.U.05.L.310	0	0	3	0	3	V
11	Computer Aided Training	UPB.11.U.05.L.311	1	1	0	0	2	V
TOTAL facultative disciplines (L)			1	1	5	0	7	

SEMESTRUL II

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
12	Statistics and Experimental Design	UPB.11.F.06.O.512	2	0	2	0	3	V
13	Biochemistry	UPB.11.F.06.O.513	2	0	1	0	3	E
14	Microbiology	UPB.11.S.06.O.514	2	0	2	0	3	E
15	Hydrodynamic Unit Operations	UPB.11.S.06.O.515	2	0	1	1	4	E+P
16	Heat Transfer Unit Operations	UPB.11.S.06.O.516	2	0	1	1	4	E+P
17	Mass Transfer	UPB.11.S.06.O.517	2	1	1	0	3	E
18	<i>Technological practice in industry (4 weeks)</i>	UPB.11.D.06.O.518	0	0	0	0	6	V
TOTAL compulsory disciplines (O)			12	1	8	2	26	
Optional disciplines (A)								
19	Methods of Chemical and Biochemical Processes Risk Assessment/Industrial Furnaces	UPB.11.S.06.O.519	2	0	1	0	2	V
20	Corrosion/Fuel Cells	UPB.11.D.06.O.520	1	0	1	0	2	V
TOTAL optional disciplines (A)			3	0	2	0	4	
TOTAL compulsory (O) and optional (A) disciplines			15	1	10	2	30	
Facultative disciplines (L)								
21	Advanced Computer Use	UPB.11.D.06.O.120	0	0	2	0	2	V
22	Classroom Management	UPB.11.U.06.O.121	1	1	0	0	3	V
23	<i>Teaching practice II</i>	UPB.11.U.06.O.122	0	0	3	0	3	V
TOTAL facultative disciplines (L)			1	1	5	0	8	

FOURTH YEAR CURRICULA

SEMESTER I

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
1	Heat Transfer Unit Operations	UPB.11.S.07.O.501	2	2	1	1	6	E+P
2	Simulation Software for Chemical and Biochemical Processes	UPB.11.S.07.O.502	2	0	2	0	4	E
3	Chemical and Biochemical Reactors	UPB.11.S.07.O.503	2	0	2	0	5	E
4	Chemical and Biochemical Unit Processes	UPB.11.S.07.O.504	2	0	2	0	5	E
TOTAL compulsory disciplines (O)			8	2	7	1	20	
Optional disciplines (A)								
5	Treatment of Industrial Wastes/Pollutant Dispersion into the Environment	UPB.11.S.07.O.505	2	0	1	0	3	V
6	Membrane Separation/Rheology	UPB.11.S.07.O.506	2	0	1	0	3	V
7	Chemical and Biochemical Process Integration/Process intensification	UPB.11.S.07.O.507	2	0	2	0	4	E
TOTAL optional disciplines (A)			6	0	4	0	10	
TOTAL compulsory (O) and optional (A) disciplines			14	2	11	1	30	
Facultative disciplines (L)								
8	Advanced Computer Use	UPB.11.F.07.L.508	0	0	2	0	2	V
9	Marketing	UPB.11.D.07.L.509	1	1	0	0	2	V
TOTAL facultative disciplines (L)			1	1	2	0	4	

SEMESTER II

No.	Discipline		Hours/week				CP	Eval.
	Name	Code	C	S	L	P		
Compulsory disciplines (O)								
10	Chemical and Biochemical Reactors	UPB.11.S.08.O.510	3	1	1	1	6	V+P
11	Chemical and Biochemical Unit Processes	UPB.11.S.08.O.511	2	0	2	0	4	V
12	Optimization of Chemical and Biochemical Processes	UPB.11.S.08.O.512	2	0	2	0	4	V
13	Automation of Chemical and Biochemical Processes	UPB.11.S.08.O.513	2	0	2	0	4	V
14	Software Tools in Process Engineering	UPB.11.S.08.O.514	2	0	2	0	4	V
15	Chemical and Biochemical Plants Design	UPB.11.S.08.O.515	1	0	0	1	3	V+P
16	<i>Individual activity for preparing B Sc diploma project</i>	UPB.11.S.08.O.516	0	0	0	4	5	
TOTAL compulsory disciplines (O)			12	1	9	6	30	
Facultative disciplines (L)								
17	Advanced Computer Use	UPB.11.D.08.L.517	0	0	2	0	2	V
TOTAL facultative disciplines (L)			0	0	2	0	2	