



4.5 SUGGESTED STUDY PLAN FOR PETROCHEMICALS ENGINEERING DEPARTMENT

Tables 4.49 to 4.56 show the suggested study plans during the four academic years of specialized study starting from Second Year up to the Fifth Year (or Academic Semesters 3 to 10) for the Petrochemicals Engineering specialization.

Table 4.57 illustrates the course flow chart model for the suggested study plan of Petrochemicals Engineering department program.

Table 4.49
Suggested Study Plan of Petrochemicals Engineering Program
Second Year/ Semester 3

Course Code	Course Name	Cr.	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours		
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total	
EB103	Engineering Mathematics (3)	3	EB102	2	2	1	40	10			50	100	3	
EP217	Materials Science	3	EB121	2	1	2	40			10	50	100	3	
EM 251	Fluid Mechanics	3	EB112	2	2	1	40			10	50	100	3	
EP 210	Organic Chemistry (1)	3	EB131	2	0	3	40			10	50	100	3	
EP 214	Inorganic Chemistry	3	EB131	2	1	2	40			10	50	100	3	
HU113	Tech. Report Writing and Presentation Skill	2	None.	1	0	2	40	10			50	100	2	
UGE 03	English Language (3)	2	UGE 02	1	0	2	40	10			50	100	2	
Total Credit hours		19	Total Contact Hours	12	6	13								
										31				





Table 4.50
Suggested Study Plan of Petrochemicals Engineering Program
Second Year/ Semester 4

Course Code	Course Name	Cr.	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours	
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total
EB 204	Engineering Mathematics (4)	3	EB103	2	2	1	40	10			50	100	3
EE 208	Fundamentals of Electric Engineering	3	BE122& BE102	2	2	1	40			10	50	100	3
EP 213	Organic Chemistry (2)	3	EP 210	2	0	3	40			10	50	100	3
EP 314	Instrumentation Analysis	3	EB131	2	0	3	40			10	50	100	3
EP 315	Physical Chemistry	3	EB131	2	0	3	40			10	50	100	3
UC01	Communication Skills	2	None	2	0	0	50				50	100	2
Total Credit hours		17	Total Contact Hours	12	3	11							
						26							





Table 4.51
Suggested Study Plan of Petrochemicals Engineering Program
Third Year/ Semester 5

Course Code	Course Name	Cr.	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours	
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total
EB 207	Numerical Analysis Using MATLAB	4	EB 102	3	1	2	40			10	50	100	3
EB 208	Applied Probability and Statistics	3	EB204	3	1	0	50				50	100	3
EP 200	Chemical Engineering Thermodynamics (1)	3	EB122	2	2	0	50				50	100	3
EP 327	Chemical Process Principles	4	EB131& EB103	3	3	0	50				50	100	3
EP 201	Introduction to Petrochemical Industries	3	EP210	3	0	0	50				50	100	3
Total Credit hours		19	Total Contact Hours	16	7	2							
													24





Table 4.52

Suggested Study Plan of Petrochemicals Engineering Program
 Third Year/ Semester 6

Course Code	Course Name	Cr.	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours	
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total
UGA 03	Arabic Language Skills	2	None	2	0	0	40				60	100	2
EP 389	Introduction to Environmental Engineering	3	EP210	3	0	0	50			0	50	100	2
EP 220	Chemical Engineering Thermodynamics (2)	4	EP200	3	2	1	40			10	50	100	3
EP 231	Heat Transfer in Chemical Process	4	EP 327	3	2	1	40			10	50	100	3
EP 340	Safety for Petrochemical Industries	2	---	2	0	0	50				50	100	2
EP elective	<i>Elective (1):</i> Table 3.66	3	-	2	0	2	40			10	50	100	3
Total Credit hours		18	Total Contact Hours	15	4	4							
				23									



Table 4.53
Suggested Study Plan of Petrochemicals Engineering Program

Fourth Year/ Semester 7

Course Code	Course Name	Cr.	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours	
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total
EP 313	Mass Transfer	3	EP231	2	2	0	50				50	100	3
EP 324	Gas Treatment and Liquefaction	4	EP213& EP214& EP327	4	1	0	50				50	100	3
EP 333	Chemical Reaction & Industrial Catalysis	4	EP315 & EB103	3	2	1	40			10	50	100	3
EP 335	Polymer Science & Engineering (1)	3	EP213& EP217	2	1	1	40			10	50	30	3
EP <i>elective</i>	<i>Elective (2):</i> Table 3.66	3	-	3	0	0	40			10	50	100	3
Total Credit hours		17	Total Contact Hours	14	6	2							
						22							





Table 4.54

Suggested Study Plan of Petrochemicals Engineering Program
Fourth Year/ Semester 8

Course Code	Course Name	Cr.	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours	
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total
EP 317	Unit Operation	4	EP313	3	2	1	40			10	50	100	3
EP 320	Automatic Process Control	3	EB204	2	2	0	50				50	100	3
EP 336	Polymer Science & Engineering (2)	3	EP335	2	1	1	40			10	50	30	3
EP 318	Corrosion Engineering	3	EP131	2	1	2	40			10	50	100	3
EP 329	Industrial Fibers Technology	3	EP 335	3	0	0	50				50	100	3
HU	Elective (1)	2	----	2	0	0	50				50	100	2
Total Credit hours		18	Total Contact Hours	14	6	4							
							24						





Table 4.55

Suggested Study Plan of Petrochemicals Engineering Program
 Fifth Year/ Semester 9

Course Code	Course Name	Cr	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours		
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total	
EP 362	Petroleum Refining & Evaluation of Its Products	4	EP213	3	2	1	40			10	50	100	3	
EP 361	Fertilizers Industries	3	EP 201	2	2	0	50				50	100	3	
EP 368	Chemical Plant Design (1)	4	EP 327	3	2	0	50				50	100	3	
EP 385	Optimization of Chemical Process	3	EP333& EP231& EB207	2	2	0	50				50	100	3	
EP490-1	Graduation Project (1)	4	Department Approval	3	0	3	20	30	30	--	--	100	--	
Total Credit hours		18	Total Contact Hours	13	8	4								
						25								



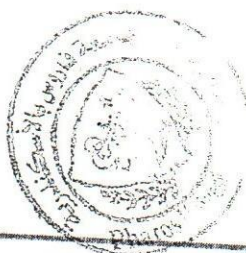


Table 4.56

Suggested Study Plan of Petrochemicals Engineering Program
Fifth Year/ Semester 10

Course Code	Course Name	Cr.	Pre-requisites	Number of Hours per Week			Distribution of Grade (in percent)					Time of the Final Written Exam in Hours		
				Lecture	Tutorial	Lab	Class Work	Project & IT application	Oral	Lab (or Workshop)	Final Written Exam		Total	
EP <i>elective</i>	<i>Elective (3):</i> Table 3.66	3	-	3	0	0	40				10	50	100	3
EP 369	Chemical Plant Design (2)	3	EP368	2	2	0	50					50	100	3
EP 339	Production of Plastics	3	EP336	3	0	0	50					50	100	3
EP 390	Industrial Equipment & Material Handling	3	PE317	2	2	0	50					50	100	3
EP490-2	Graduation Project (2)	4	EP490-1	3	0	3	20	30	30	--	--	100	--	
HU	Elective (2)	2	-----	2	0	0	50					50	100	2
Total Credit hours		18	Total Contact Hours	15	2	3								
							20							

TOTAL CREDIT ACHIEVED for
PETROCHEMICALS ENGINEERING SPECIALIZATION = 179



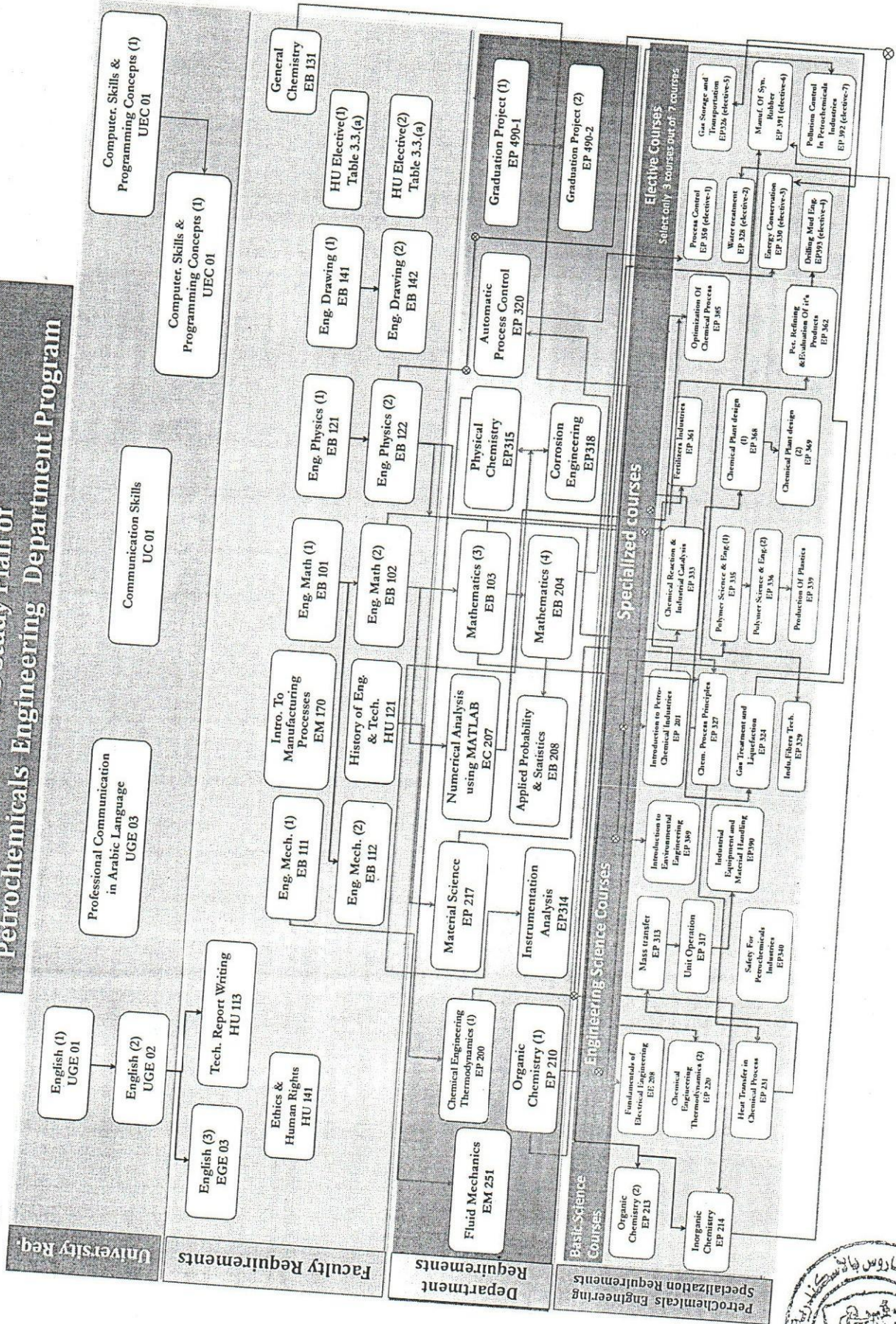


**Pharos University in Alexandria - Faculty of Engineering
Study Plans for Petrochemicals Engineering Department
(2014)**





Table (4.57) Course Flow Chart Model
For the Study Plan of
Petrochemicals Engineering Department Program



Study Plans for Petrochemical Engineering Students
Engineering By Laws 2023

Semester 1

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
EBS101	Engineering Mathematics (1)	3	Nil	2	2	1
EBS111	Engineering Mechanics (1)	3	Nil	2	2	0
EBS121	Engineering Physics (1)	3	Nil	2	2	1
EBS141	Engineering Drawing & Descriptive Geometry	3	Nil	2	2	0
CPE012	Computer & Programming	2	Nil	1	1	2
UGE 01	English Language (1)	2	Nil	2	0	0
UCS01	Communication Skills (1)	1	Nil	1	0	0
Total Credit hours		17		12	9	4

Semester 2

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
EBS102	Engineering Mathematics (2)	3	EBS101	2	2	1
EBS112	Engineering Mechanics (2)	3	EBS111	2	2	0
EBS122	Engineering Physics (2)	3	EBS121	2	2	1
PCE011	Introduction to Industrial Chemistry	2	Nil	1	0	2
EME081	Introduction To Production Technology	2	Nil	1	1	2
HUE121	Engineering Perspective and Technology	2	Nil	1	0	2
UGE02	English Language (2)	2	UGE01	2	0	0
Total Credit hours		17		11	7	8

Semester 3

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
PCE 123	Organic Chemistry	4	PCE 011	3	1	2
PCE 125	Analytical Chemistry and Instrumental analysis	4	PCE 011	2	1	3
EBS 201	Engineering Mathematics (3)	3	EBS 102	2	2	1
EME 150	Fluid mechanics	3	EBS 121	2	2	1
PCE 124	Material Science	3	EBS 121	2	1	2
Total Credit hours		17		11	7	9

Semester 4

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
PCE 131	Introduction to petrochemical industries	3	PCE 123	3	0	0
PCE 127	Material Balance	3	PCE 011, EBS 201	2	2	0
EBS 208	Applied probability and Statistics	3	EBS 102	2	2	0
PCE 128	Physical Chemistry	3	PCE 011	2	0	3
EBS 202	Engineering Mathematics (4)	3	EBS 201	2	2	1
Total Credit hours		15		11	6	4

Semester 5

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
PCE 222	Chemical Engineering Thermodynamics	3	EBS 121	2	2	1
PCE 221	Energy Balance	3	PCE 127	2	2	0
PCE 232	Fundamentals of Polymer Engineering	3	PCE 124, PCE 123	2	1	1
PCE 223	Introduction to environmental engineering	3	PCE 123, PCE 125	2	2	0
PCE 224	Unit Operation 1	3	PCE 127	2	2	0
ELE 210	Introduction to Electrical Systems	2	Nil	2	1	0
Total Credit hours		17		12	10	2

Semester 6

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
PCE 225	Heat Transfer in chemical process	3	PCE 127, PCE 221	2	2	1
PCE 233	Gas Treatment and liquefaction	3	PCE 123, PCE 127	3	1	0
PCE 227	Phase equilibrium	2	PCE 222	2	1	0
PCE 228	Unit Operation 2	3	PCE 224	2	2	1
PCE 226	Corrosion Engineering	3	PCE 011	2	1	2
HUE 113	Technical Report writing	2	UGE 01	1	0	2
Total Credit hours		16		12	7	6

Semester 7

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
PCE 329	Water treatment	3	PCE 125	2	0	2
PCE 321	Chemical Reaction and Catalysis	3	PCE 128, EBS 202	2	2	1
PCE 335	Petroleum refining	3	PCE 123	2	2	1
PCE 334	Polymer processing	3	PCE 232	2	1	1
PCE 322	Automatic Process Control	3	EBS 202	2	2	0
Total Credit hours		15		10	7	5

Semester 8

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
HUE ----	Faculty Elective	2		2	0	0
PCE ----	PCE Elective	3				
PCE----	PCE Elective	3				
PCE 323	Process safety management	3	PCE 011	2	2	0
PCE 331	Process Modeling and Optimization in petrochemical processes	3	PCE 127, PCE 221,EBS 202	2	2	1
U----	UR Elective	2		2	0	0
Total Credit hours		16				

Semester 9

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
PCE 432	Graduation project 1	4	Department approval	3	0	3
U---	UR Elective	2		2	0	0
PCE---	PCE Elective	3				
PCE 425	Process Plant Design	3	PCE 127, PCE 221	2	2	0
PCE 424	Industrial equipment and material handling	3	PCE 228	2	2	0
Total Credit hours		15				

Semester 10

Course Code	Course Name	Cr.	Pre-requisites	Weekly Hours		
				L	T	P
PCE 433	Graduation project 2	4	PCE 432	3	0	3
PCE ----	PCE Elective	3				
PCE---	PCE Elective	3				
UCS 02	Communication skills 2	1	UCS 01	1	0	0
HUE ---	Faculty Elective	2	Nil	2	1	0
U----	UR Elective	2		2	0	0
Total Credit hours		15				