



Degree and Study Plan

College : **ENGINEERING**
 Department : **PETROLEUM AND CHEMICAL ENGINEERING**
 Cohort : **2011**
 Degree : **BACHELOR OF ENGINEERING**
 Major : **CHEMICAL AND PETROLEUM ENGINEERING**
 Specialization :

<u>Summary of Credits:</u>	
University Requirements (UR)	6
General Foundation Program	NC ⁺
Arabic	3
Contemporary Omani Society	1
Oman & Islamic Civilization or Islamic Culture	2
University Electives (UE)	6
See List A	
College Requirements (CR)	35
See list B	
College Electives (CE)	0
See list C	
Departmental Requirements (DR)	29
See list D	
Departmental Electives (DE)	0
See list E	
Major Requirements (AR)	51
See list F	
Major Electives (AE)	9
See list G	
Minor Requirements (IR)	0
See list H	
Minor Electives (IE)	0
See list I	
Specialization Requirements (SR)	0
See list J	
Specialization Electives (SE)	0
See list K	
TOTAL	136

+ No Credit

For reference contact:	HoD	Ext. 1318
	HoD	Date
	Dean's Office	Date
	Admission and Registration	Date

Department of Petroleum and Chemical Engineering
Study Plan for 2011 Cohort (Scheme I): Chemical & Process Engineering

	Course Code	Course Title	Cr.	Pre-req.	Cat
Semester 1 Fall		General Foundation Program	0		UR
	Total		0		

Semester 2 Spring	HIST 1010 ISLM 1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	LANC 2160	English for Engineering I	3		CR
	CHEM 1071	General Chemistry for Engineers	3		CR
	ENGR 1501	Introduction to Engineering	1		CR
	ENGR 1600	Workshop I	1		CR
	MATH 2107	Calculus I	4		CR
Total		14			

Semester 3 Fall	ARAB 1001	Arabic	3		UR
	LANC 2161	English for Engineering II	3	LANC2160	CR
	SOCI 3320	Contemporary Omani Society	1		UR
	MATH 2108	Calculus II	3	MATH 2107	CR
	PHYS 2107	General Physics I	4		CR
Total		14			

Semester 4 Spring	COMP 2xxx	Computer Programming ^a	3		CR
	MATH 3171	Linear Algebra and Multivariate Calculus for Engineers	3	MATH 2108, LANC2161	CR
	PHYS 2108	General Physics II	4	PHYS 2107	CR
	CHPE 3102	Engineering Thermodynamics	3	CHEM 1071, MATH 2107	DR
	CHPE 3112	Principles of Chemical Processes	3	CHEM 1071	AR
Total		16			

Semester 5 Fall		University Elective	2		UE
	MATH 4174	Differential Equations & Applications for Engineers	3	MATH 2108, LANC2161	CR
	CHPE 2211	Organic Chemistry	4	CHEM 1071	AR
	CHEM 2102	General Chemistry II	4	CHEM 1071	AR
	CHPE 3302	Fluid Flow	3	CHPE 3102	DR
Total		16			

Winter break	ENGR 3006	Industrial Training I	0	CHPE 3112	CR
	Total		0		

Semester 6 Spring	ECCE 3015	Electrical Engineering Fundamentals	3	PHYS 2107	DR
	PNGE 3202	Numerical Methods	3	COMP 2xxx, MATH 3171	DR
	CHPE 3211	Applied Physical Chemistry	3	CHEM 2102	AR
	CHPE 3101	Materials Engineering	3		DR
	CHPE 3402	Heat Transfer	3	CHPE 3302 or MEIE 4141, MATH 4174	DR
Total		15			

^a COMP 2xxx Fortran/ C++/ Visual Basic/Matlab

	Course Code	Course Title	Cr.	Pre-req.	Cat
Semester 7 Fall	CHPE3103	Professional Practice	2	LANC2161	DR
		Technical Elective I	3		AE
	PNGE 4101	Statistics for Engineers	3	MATH 2107	DR
	CHPE 4112	Chemical Engineering Thermodynamics	3	CHPE 3102/3112, PHYS 2108	AR
	CHPE 4212	Unit Operations I	3	CHPE3402 or MEIE4144	AR
	CHPE 4312	Chemical Engineering Lab I	2	ENGR 3006, CHPE 3402	AR
Total			16		

Semester 8 Spring	CHPE 4412	Process Heat Transfer	3	CHPE 3402 or MEIE4144, CHPE3101	AR
	CHPE 4114	Computer Aided Design	2	PNGE 3202	AR
	PNGE 5103	Engineering Economy	3	MATH 2107	DR
	CHPE 4512	Chemical Reaction Engineering	3	CHPE 3211, CHPE2211	AR
	CHPE 4612	Unit Operations II	3	CHPE 4112/4212	AR
		University Elective	2		UE
Total			16		

Summer	ENGR 4006	Industrial Training II	0	ENGR 3006	CR
	Total			0	

Semester 9 Fall		University Elective	2		UE
	PNGE 5203	Management for PCE	3	PNGE 5103	DR
	CHPE 5412	Plant and Process Design	3	CHPE 4612, PNGE 5103, CHPE 4412, CHPE 4512	AR
	CHPE 5112	Chemical Process Control	3	CHPE4512, MATH 3171	AR
	CHPE 4712	Chemical Engineering Lab II	2	CHPE 4312, PNGE 4101, CHPE4512, CHPE4612	AR
	CHPE 5312	Project I	2	CHPE4114, 4612, 4512	AR
Total			15		

Semester 10 Spring		Technical Elective II	3		AE
		Technical Elective III	3		AE
	CHPE 3212	Chemical Process Industries	3	CHPE 2211	AR
	CHPE 5212	Chemical Engineering Lab III	2	CHPE 4612, 4712, 5112	AR
	CHPE 5512	Project II	3	CHPE 5312, 5412	AR
Total			14		

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Study Plan for 2011 Cohort (Scheme II): Chemical & Process Engineering

	Course Code	Course Title	Cr.	Pre-req.	Cat
Semester 1 Fall		General Foundation Program	0		UR
	Total			0	
Semester 2 Spring		General Foundation Program	0		UR
	Total			0	
Semester 3 Fall	ARAB 1001	Arabic	3		UR
	LANC 2160	English for Engineering I	3		CR
	CHEM 1071	General Chemistry for Engineers	3		CR
	ENGR 1501	Introduction to Engineering	1		CR
	ENGR 1600	Workshop I	1		CR
	MATH 2107	Calculus I	4		CR
	Total			15	
Semester 4 Spring		University Elective	2		UE
	HIST 1010	Oman & Islamic Civilization or	2		UR
	ISLM 1010	Islamic Culture			
	LANC 2161	English for Engineering II	3	LANC2160	CR
	SOCI 3320	Contemporary Omani Society	1		UR
	MATH 2108	Calculus II	3	MATH 2107	CR
	PHYS 2107	General Physics I	4		CR
	Total			15	
Summer	COMP 2xxx	Computer Programming ^a	3		CR
		University Elective	2		UE
	Total			5	
Semester 5 Fall	MATH 3171	Linear Algebra and Multivariate Calculus for Engineers	3	MATH 2108, LANC2161	CR
	MATH 4174	Differential Equations & Applications for Engineers	3	MATH 2108, LANC2161	CR
	CHEM 2102	General Chemistry II	4	CHEM 1071	AR
	CHPE 3102	Engineering Thermodynamics	3	CHEM 1071, MATH 2107	DR
	CHPE 3112	Principles of Chemical Processes	3	CHEM 1071, MATH 2107	AR
	Total			16	
Winter break	ENGR 3006	Industrial Training	0	CHPE 3112	CR
	Total			0	
Semester 6 Spring	CHPE 3101	Materials Engineering	3		DR
	PNGE 3202	Numerical Methods	3	COMP 2xxx, MATH 3171	DR
	CHPE 3211	Applied Physical Chemistry	3	CHEM 2102	AR
	CHPE 3302	Fluid Flow	3	CHPE 3102	DR
	PHYS 2108	General Physics II	4	PHYS 2107	CR
	Total			16	

^a COMP 2xxx Fortran/ C++/ Visual Basic/Matlab

	Course	Course Title	Cr.	Pre-req.	Cat
Summer	PNGE 4101	Statistics for Engineers*	3	MATH 2107	DR
	CHPE 3402	Heat Transfer	3	CHPE 3302 or MEIE4141, MATH 4174	DR
	Total			6	

Semester 7 Fall	CHPE 4312	Chemical Engineering Lab I	2	ENGR 3006, CHPE 3402 or MEIE4144	AR
	CHPE 2211	Organic Chemistry	4	CHEM 1071	AR
	CHPE 4112	Chemical Engineering Thermodynamics	3	CHPE 3102/3112, PHYS 2108	AR
	CHPE 4212	Unit Operations I	3	CHPE3402 or or MEIE4144	AR
		Technical Elective I	3		AE
	CHPE3103	Professional Practice	2	LANC2161	DR
Total			17		

Semester 8 Spring	CHPE 4412	Process Heat Transfer	3	CHPE 3402 or MEIE4144, CHPE3101	AR
	CHPE 4114	Computer Aided Design	2	PNGE 3202	AR
	PNGE 5103	Engineering Economy	3	MATH 2107	DR
	CHPE 4512	Chemical Reaction Engineering	3	CHPE 3211, 2211	AR
	CHPE 4612	Unit Operations II	3	CHPE 4112/4212	AR
Total			14		

Summer	ENGR 4006	Industrial Training II	0	ENGR 3006	CR
	Total			0	

Semester 9 Fall	PNGE 5203	Management for PCE	3	PNGE 5103	DR
	CHPE 5412	Plant and Process Design	3	CHPE 4612, PNGE 5103, CHPE4412, CHPE4512	AR
	ECCE 3015	Electrical Engineering Fundamentals	3	PHYS 2107	DR
	CHPE 5112	Chemical Process Control	3	CHPE4512, MATH 3171	AR
	CHPE 4712	Chemical Engineering Lab II	2	CHPE 4312/4512 PNGE 4101, CHPE4612	AR
	CHPE 5312	Project I	2	CHPE4114, 4612, 4512	AR
Total			16		

Semester 10 Spring		University Elective	2		UE
		Technical Elective II	3		AE
		Technical Elective III	3		AE
	CHPE 3212	Chemical Process Industries	3	CHPE 2211	AR
	CHPE 5212	Chemical Engineering Lab III	2	CHPE 4612, 4712, 5112	AR
	CHPE 5512	Project II	3	CHPE 5312, CHPE5412	AR
Total			16		

* These two courses offer each semester and may not offer in summer.

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Study Plan for 2011 Cohort: Chemical & Process Engineering

LIST A^T – UNIVERSITY ELECTIVES (6 Credits)

#	Course Code	Course Title	Credits	College
1	ARAB1040	Literature and Sociology	2	Arts
2	ARAB1050	Language and Sociology	2	Arts
3	ARCH1170	Development Civilization in Oman	2	Arts
4	ARCH1180	Archaeology and Environment in Oman	2	Arts
5	ARCH1520	Arch in Ancient Oman	2	Arts
6	ARCH1525	Arch Style Arab Gulf	2	Arts
7	ARCH1526	Islamic Arch	2	Arts
8	ARCH1530	Oman Arch Through Ages	2	Arts
9	ARCH1531	Hist Animals in Oman	2	Arts
10	ARCH1535	Oman Town Culture Rem	2	Arts
11	ARCH1536	Arch. Know Arab Peninsulum	2	Arts
12	ARCH1537	Cult. Development Arab Gulf	2	Arts
13	ARCH1538	Oral History Cult. Heritage	2	Arts
14	ARCH1539	Hist. Ethn Jewwl. Oman	2	Arts
15	ARCH1540	Natural Culture Heritage Oman	2	Arts
16	ARCH1541	Cult. Scent and Arom. Oman	2	Arts
17	ARCH1550	Devl. Art Arch. Oman	2	Arts
18	ARCH1551	Admin. Arch. Heritage	2	Arts
19	ARCH5500	Sea Port and Mart. Arch	2	Arts
20	ARED1001	Contemporary Visual Arts	2	Education
21	ARED1002	Appreciation of Islamic Arts and Arabic	2	Education
22	BCOM1950	Varieties of Public and Professional Communication	3	Commerce
23	BCOM1960	Cross-Cultural Communication	2	Commerce
24	BIOL1003	Genetics in our Life	2	Science
25	BIOL1004	Environment Issues	2	Science
26	CUTM1002	Environmental Education	2	Education
27	CUTM1003	Principles of Teaching	2	Education
28	GEOG2021	Man and Natur. Env. In Oman	2	Arts
29	GEOG2031	Urbanization in the Arabian Gulf	2	Arts
30	GEOG2122	Man and Environment	2	Arts
31	GEOG2341	Dev. Countries	2	Arts
32	HIST1030	History of the GCC Countries	2	Arts
33	HIST1040	Some Aspects of the History of Oman	2	Arts
34	INFO4100	Children's Literature	2	Arts
35	ISLM1020	Human Right in Islam	2	Education
36	ISLM2010	Prophet Biog.	2	Education
37	ISLM2030	The Miracle of the Holy Quran	2	Education
38	ISLM2040	Islamic Economy	2	Education
39	ISLM2060	Family Systems in Islam	2	Education
40	ISLM2070	Quranic Stories	2	Education
41	ISLM2080	General Aims	2	Education
42	ISLM2090	Islamic Ethics	2	Education

43	ISLM2150	Islam and the Modern World	2	Education
44	MASS1020	Arts of Media Edit	2	Arts
45	MASS1030	Public Opinion (UE)	2	Arts
46	MASS1060	Mass Media and Society	2	Arts
47	MASS1070	International Comm	2	Arts
48	MASS1080	Principles of Public Relations (UE)	2	Arts
49	NURS1004	First Aid	2	Nursing
50	NURS1005	Physical & Psychological Child Health	2	Nursing
51	PHED1000	Physical Fitness	2	Education
52	PHIL2050	International Meth	2	Arts
53	PHIL2060	Ethics	2	Arts
54	PHIL2070	Tren. Cont. Phi. Though	2	Arts
55	PHIL2213	Science in Arab Through	2	Arts
56	PSYC1001	Human Behavior	2	Education
57	PSYC1002	Psych/Human Problems	2	Education
58	SOCI2151	Medical Sociology	2	Arts
59	SOCI2361	Introduction to Social Work	2	Arts
60	THAR1001	Theater Appreciation	2	Arts
61	THAR1003	Music Appreciation	2	Arts
62	THAR1012	Play Writing	2	Arts
63	THAR1013	Oratory/Presentation	2	Arts
64	THAR1014	Scholastic Theater	2	Arts
65	THAR1016	Child's Theater	2	Arts
66	THAR1017	Theater Scenography	2	Arts
67	TOUR1050	Tourism in Oman	2	Arts

T: Engineering students must select a humanity or social course (non-scientific & non-linguistic course) from any college as a University Elective.

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LIST B: College REQUIREMENTS (35 credits)

Code	Title	Credits	Pre-Requisite / Co-req. *
ENGR1501	Introduction to Engineering	1	
ENGR1600	Workshop I	1	
LANC 2160	English for Engineering I	3	
LANC 2160	English for Engineering II	3	LANC 2160
MATH2107	Calculus I	4	MATH1106
MATH2108	Calculus II	3	MATH 2107
MATH3171	Linear Algebra & Multivariate Calculus	3	MATH2108, LANC2161
MATH4174	Differential Equations for Engineers	3	MATH2108, LANC2161
ENGR2216 Or COMP2002	Programming in Fortran or Introduction to Comp. Program.	3	
PHYS2107	General Physics I	4	MATH2107*
PHYS2108	General Physics II	4	PHYS 2107
CHEM1071	General Chemistry for Engineers	3	
ENGR3006	Industrial Training I	0	CHPE 3112
ENGR4006	Industrial Training II	0	ENGR3006
Total		35	

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LIST C: COLLEGE ELECTIVES (0 credits)

Code	Title	Credits	Pre-Requisite / Co-req. *
Total		0	

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Study Plan for 2011 Cohort: Chemical & Process Engineering

LIST D: DEPARTMENT REQUIREMENTS (29 credits)

Code	Title	Credits	Pre-Requisite / Co-req. *
CHPE 3101	Materials Engineering	3	
CHPE 3102	Engineering Thermodynamics	3	MATH 2107
CHPE 3302	Fluid Flow	3	CHPE 3102
CHPE 3402	Heat Transfer	3	CHPE 3302 or MEIE 4141, MATH 4174
PNGE 3202	Numerical Methods & Analysis	3	COMP 2xxx, MATH 3171
PNGE 4101	Statistics for Engineers	3	MATH 2107
PNGE 5103	Engineering Economy	3	MATH 2107
PNGE 5203	Management for PCE	3	PNGE 5103
ECCE 3015	Electrical Engineering Fundamentals	3	PHYS 2107
CHPE 3103	Professional Practice	2	LANC 2161
Total		29	

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LIST F: MAJOR REQUIRMENTS (51 credits)

Code	Title	Credits	Pre-Requisite / Co-req. *
CHPE 3112	Principles of Chemical Processes	3	CHEM 1071, MATH 2107
CHPE 2211	Organic Chemistry	4	CHEM 1071
CHEM 2102	General Chemistry II	4	CHEM 1071
CHPE 3211	Applied Physical Chemistry	3	CHEM 2102
CHPE 4112	Chemical Engineering Thermodynamics	3	CHPE 3102/3112, PHYS 2108
CHPE 4212	Unit Operations I	3	CHPE3402 or MEIE4144
CHPE 4312	Chemical Engineering Lab I	2	ENGR 3006, CHPE 3402 or MEIE4144
CHPE 4412	Process Heat Transfer	3	CHPE 3402 or MEIE4144, CHPE3101
CHPE 4114	Computer Aided Design	2	PNGE 3202
CHPE 4512	Chemical Reaction Engineering	3	CHPE 3211, CHPE2211
CHPE 4612	Unit Operations II	3	CHPE 4112/4212
CHPE 5412	Plant and Process Design	3	CHPE 4612, PNGE 5103, CHPE 4412, CHPE 4512
CHPE 5112	Chemical Process Control	3	CHPE4512, MATH 3171
CHPE 4712	Chemical Engineering Lab II	2	CHPE 4312, PNGE 4101, CHPE4512, CHPE4612
CHPE 5312	Project I	2	CHPE4114, 4612, 4512
CHPE 3212	Chemical Process Industries	3	CHPE 2211
CHPE 5212	Chemical Engineering Lab III	2	CHPE 4612, 4712 , 5112
CHPE 5512	Project II	3	CHPE 5312, 5412
Total		51	

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LIST G: MAJOR ELECTIVES (9 credits)

The student should select 3 courses (9 credit hours) from the following courses (or any course under the approval of the student advisor):

Code	Title	Credits	Pre-Requisite / Co-req. *
CHPE 4102	Polymers	3	CHPE 2211 or PNGE 3111
CHPE 4202	Corrosion	3	CHPE 3211
CHPE 4302	Desalination	3	CHPE 3402 or MEIE4144
CHPE 4402	Natural Gas Processing	3	CHPE 4112
CHPE 4812	Special Topics 1	3	CHPE 3402 or MEIE4144
CHPE 4912	Special Topics 2	3	CHPE 3402 or MEIE4144
PNGE 5102	Health, Safety and Environment	3	CHPE 3103
CHPE 5207	Petroleum Refining	3	CHPE 2211 or PNGE 3111
CHPE 5612	Chemical Process Safety	3	CHPE 3302
CHPE 5712	Process Integration, Synthesis and Simulation	3	CHPE 4612
CHPE 5812	Heterogeneous Catalysis and Reactor Design	3	CHPE 4512
CIVL 4136	Environmental Engineering I	3	CHEM 1017, CHPE 3302
CHEM 3337	Fundamentals of Corrosion of Metals	3	
CHEM 3341	Analytical Chemistry I	3	MATH 1106, CHEM 2102
Total		9	