



## Degree and Study Plan

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

<u>Summary of Credits:</u>	
<b>University Requirements (UR)</b>	<b>6</b>
General Foundation Program	NC <sup>+</sup>
Arabic	3
Contemporary Omani Society	1
Oman & Islamic Civilization or Islamic Culture	2
<b>University Electives (UE)</b>	<b>6</b>
See List A	
<b>College Requirements (CR)</b>	<b>35</b>
See list B	
<b>College Electives (CE)</b>	<b>0</b>
See list C	
<b>Departmental Requirements (DR)</b>	<b>29</b>
See list D	
<b>Departmental Electives (DE)</b>	<b>0</b>
See list E	
<b>Major Requirements (AR)</b>	<b>54</b>
See list F	
<b>Major Electives (AE)</b>	<b>6</b>
See list G	
<b>Minor Requirements (IR)</b>	<b>0</b>
See list H	
<b>Minor Electives (IE)</b>	<b>0</b>
See list I	
<b>Specialization Requirements (SR)</b>	<b>0</b>
See list J	
<b>Specialization Electives (SE)</b>	<b>0</b>
See list K	
<b>TOTAL</b>	<b>136</b>

<sup>+</sup> Not Credited

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): Petroleum and Natural Gas Engineering**

	Course Code	Course Title	Cr.	Pre-req./ Co-req.*	Cat.
<b>Semester 1 Fall</b>		General Foundation Program	0		UR
	<b>Total</b>			<b>0</b>	

<b>Semester 2 Spring</b>	HIST 1010	Oman & Islamic Civilization or	2		UR
	ISLM 1010	Islamic Culture			
	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
<b>Total</b>			<b>14</b>		

<b>Semester 3 Fall</b>		University Elective	2		UE
	ARAB 1001	Arabic	3		UR
	LANC 2161	English for Engineering II	3	LANC 2160	CR
	MATH 2108	Calculus II	3	MATH 2107	CR
	PHYS 2107	General Physics I	4	MATH 2107*	CR
	<b>Total</b>			<b>15</b>	

<b>Semester 4 Spring</b>	CHPE3103	Professional Practice	2	LANC 2161	DR
	SOCI 3320	Contemporary Omani Society	1		UR
	COMP 2xxx	Computer Programming <sup>a</sup>	3		CR
	MATH 4174	Differential Equations & Applications for Engineers	3	MATH 2108, LANC 2161	CR
	PHYS 2108	General Physics II	4	PHYS 2107	CR
	PNGE 2102	Basic Mechanics	3	PHYS 2107	AR
	<b>Total</b>			<b>16</b>	

<b>Semester 5 Fall</b>		University Elective	2		UE
	CHPE 3102	Engineering Thermodynamics	3	MATH 2107	DR
	ERSC 2101	Introduction to Geology I	4		AR
	PNGE 3111	Chemistry for Petroleum Engineering	3	CHEM 1071	AR
	PNGE 3112	Introduction to Petroleum and Natural Gas Engineering	2		AR
	<b>Total</b>			<b>14</b>	

<b>January</b>	ENGR 3006	Industrial Training I	0	PNGE 3112	CR
	<b>Total</b>			<b>0</b>	

<sup>a</sup> COMP 2xxx Fortran/ C++/ Visual Basic/Matlab/ENGR2216

<b>Semester 6 Spring</b>	MATH 3171	Linear Algebra and Multivariate Calculus for Engineers	3	MATH 2108, LANC 2161	CR
	CHPE 3101	Materials Engineering	3		DR
	PNGE 3212	Rock and Fluid Properties	3	PNGE 3112, PNGE 3111	AR
	CHPE 3302	Fluid Flow	3	CHPE 3102	DR
	ERSC 5051	Petroleum Geology	3	ERSC 2101	AR
<b>Total</b>			<b>15</b>		

<b>Semester 7 Fall</b>	CHPE 3402	Heat Transfer	3	CHPE 3302 or MEIE 4141, MATH 4174	DR
	PNGE 3202	Numerical Methods & Analysis	3	COMP 2xxx, MATH 3171	DR
	PNGE 4101	Statistics for Engineers	3	MATH 2107	DR
	PNGE 4212	Drilling Technology	3	PNGE 2102, CHPE 3101, PNGE 4312*	AR
	PNGE 4312	Drilling Technology Lab	1	CHPE 3302, PNGE 4212*	AR
	PNGE 4412	Reservoir Engineering	3	PHYS 2108, PNGE 3212, ERSC 5051	AR
<b>Total</b>			<b>16</b>		

<b>Semester 8 Spring</b>	ECCE 3015	Electrical Engineering Fundamentals	3	PHYS 2107	DR
	GEOP 3041	General Geophysics	3	PHYS 2107, MATH 2107, ERSC 2101	AR
	PNGE 4512	Formation Evaluation	3	PNGE 4412 or GEOP3041	AR
	PNGE 4612	Well Testing	3	PNGE 4412	AR
	PNGE 4712	Reservoir Simulation	3	PNGE 4412, PNGE 3202	AR
<b>Total</b>			<b>15</b>		

<b>Summer</b>	ENGR 4006	Industrial Training II	0	ENGR 3006	CR
	<b>Total</b>			<b>0</b>	

<b>Semester 9 Fall</b>		University Elective	2		UE
		Technical elective I	3		AE
	PNGE 5103	Engineering Economy	3	MATH 2107	DR
	PNGE 5112	Production Engineering	3	CHPE 3302, PNGE 4412	AR
	PNGE 5115	Project I	2	PNGE 4212/4512/4612/4712, CHPE 3103	AR
	PNGE 5212	Secondary and Enhanced Oil Recovery	3	PNGE 4412, CHPE 3402 or MEIE 4144	AR
<b>Total</b>			<b>16</b>		

<b>Semester 10 Spring</b>		Technical elective II	3		AE
	PNGE 5102	Health, Safety and Environment	3	CHPE 3103	AR
	PNGE 5203	Management for PCE	3	PNGE 5103	DR
	PNGE 5215	Project II	3	PNGE 5115	AR
	PNGE 5412	Field Processing of Natural Gas	3	PNGE 5112	AR
<b>Total</b>			<b>15</b>		

**Department of Petroleum and Chemical Engineering**  
**Study Plan for 2011 Cohort (Scheme II): Petroleum and Natural Gas Engineering**

	Course Code	Course Title	Cr.	Pre-req./ Co-req.*	Cat.
<b>Semester 1 Fall</b>		General Foundation Program	0		UR
	<b>Total</b>		<b>0</b>		

<b>Semester 2 Spring</b>		General Foundation Program	0		UR
	<b>Total</b>		<b>0</b>		

<b>Semester 3 Fall</b>	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
	<b>Total</b>		<b>15</b>		

<b>Semester 4 Spring</b>		University Elective	2		UE
	HIST 1010 ISLM 1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	LANC 2161	English for Engineering II	3	LANC 2160	CR
	SOCI 3320	Contemporary Omani Society	1		UR
	MATH 2108	Calculus II	3	MATH 2107	CR
	PHYS 2107	General Physics I	4	MATH 2107*	CR
	<b>Total</b>		<b>15</b>		

<b>Summer</b>	COMP 2xxx	Computer Programming <sup>a</sup>	3		CR
		University Elective	2		UE
	<b>Total</b>		<b>5</b>		

<b>Semester 5 Fall</b>	CHPE3103	Professional Practice	2	LANC2161	DR
	MATH 4174	Differential Equations & Applications for Engineers	3	MATH 2108, LANC 2161	CR
	CHPE 3102	Engineering Thermodynamics	3	MATH 2107	DR
	ERSC 2101	Introduction to Geology I	4		AR
	PNGE 3111	Chemistry for Petroleum Engineering	3	CHEM 1071	AR
	PNGE 3112	Introduction to Petroleum and Natural Gas Engineering	2		AR
	<b>Total</b>		<b>17</b>		

<b>January</b>	ENGR 3006	Industrial Training I	0	PNGE 3112	CR
	<b>Total</b>		<b>0</b>		

<sup>a</sup> COMP 2xxx Fortran/ C++/ Visual Basic/Matlab/ENGR2216

<b>Semester 6 Spring</b>	MATH 3171	Linear Algebra and Multivariate Calculus for Engineers	3	MATH 2108, LANC 2161	CR
	PHYS 2108	General Physics II	4	PHYS 2107	CR
	PNGE 3212	Rock and Fluid Properties	3	PNGE 3112, PNGE 3111	AR
	CHPE 3302	Fluid Flow	3	CHPE 3102	DR
	ERSC 5051	Petroleum Geology	3	ERSC 2101	AR
<b>Total</b>			<b>16</b>		

<b>Summer</b>	CHPE 3101	Materials Engineering	3		DR
	PNGE 2102	Basic Mechanics	3	PHYS 2107	AR
<b>Total</b>			<b>6</b>		

<b>Semester 7 Fall</b>	CHPE 3402	Heat Transfer	3	CHPE 3302 or MEIE 4141, MATH 4174	DR
	PNGE 3202	Numerical Methods & Analysis	3	COMP 2xxx, MATH 3171	DR
	PNGE 4101	Statistics for Engineers	3	MATH 2107	DR
	PNGE 4212	Drilling Technology	3	PNGE 2102, CHPE 3101, PNGE 4312*	AR
	PNGE 4312	Drilling Technology Lab	1	CHPE 3302, PNGE 4212*	AR
	PNGE 4412	Reservoir Engineering	3	PHYS 2108, PNGE 3212, ERSC5051	AR
<b>Total</b>			<b>16</b>		

<b>Semester 8 Spring</b>	ECCE 3015	Electrical Engineering Fundamentals	3	PHYS 2107	DR
	GEOP 3041	General Geophysics	3	PHYS 2107, MATH 2107, ERSC 2101	AR
	PNGE 4512	Formation Evaluation	3	PNGE 4412 or GEOP3041	AR
	PNGE 4612	Well Testing	3	PNGE 4412	AR
	PNGE 4712	Reservoir Simulation	3	PNGE 4412, PNGE 3202	AR
<b>Total</b>			<b>15</b>		

<b>Summer</b>	ENGR 4006	Industrial Training II	0	ENGR 3006	CR
	<b>Total</b>			<b>0</b>	

<b>Semester 9 Fall</b>		University Elective	2		UE
		Technical elective I	3		AE
	PNGE 5103	Engineering Economy	3	MATH 2107	DR
	PNGE 5112	Production Engineering	3	CHPE 3302, PNGE 4412	AR
	PNGE 5115	Project I	2	PNGE 4212/4512/4612/4712, CHPE 3103	AR
	PNGE 5212	Secondary and Enhanced Oil Recovery	3	PNGE 4412, CHPE 3402 or MEIE 4144	AR
<b>Total</b>			<b>16</b>		

<b>Semester 10 Spring</b>		Technical elective II	3		AE
	PNGE 5102	Health, Safety and Environment	3	CHPE 3103	AR
	PNGE 5203	Management for PCE	3	PNGE 5103	DR
	PNGE 5215	Project II	3	PNGE 5115	AR
	PNGE 5412	Field Processing of Natural Gas	3	PNGE 5112	AR
<b>Total</b>			<b>15</b>		

**Department of Petroleum and Chemical Engineering**  
**Degree Plan for 2011 Cohort: Petroleum & Natural Gas Engineering**  
**LIST A<sup>T</sup> – 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.

**LIST B: COLLEGE REQUIREMENTS (35 Credits)**

Code	Title	Credits	Pre-Requisite / Co-req. *
LANC 2160	English for Engineering I	3	
LANC 2161	English for Engineering I	3	LANC 2160
ENGR1501	Introduction to Engineering	1	
ENGR1600	Workshop I	1	
MATH2107	Calculus I	4	
MATH2108	Calculus II	3	MATH 2107
MATH3171	Linear Algebra & Multivariate Calculus	3	MATH2108, LANC2161
MATH4174	Differential Equations for Engineers	3	MATH2108, LANC2161
COMP 2xxx	Computer Programming (Fortran/C++/ Visual Basic/Matlab)	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	PNGE3112
ENGR4006	Industrial Training II	0	ENGR3006
<b>Total</b>		<b>35</b>	

**Department of Petroleum and Chemical Engineering  
Degree Plan for 2011 Cohort: Petroleum & Natural Gas Engineering  
LIST C: COLLEGE ELECTIVES (0 Credits)**

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

**Department of Petroleum and Chemical Engineering  
Degree Plan for 2011 Cohort: Petroleum & Natural Gas 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
<b>Total</b>		<b>29</b>	

**Department of Petroleum and Chemical Engineering**  
**Degree Plan for 2011 Cohort: Petroleum & Natural Gas Engineering**  
**LIST F: MAJOR REQUIRMENTS (54 Credits)**

<b>Code</b>	<b>Title</b>	<b>Credits</b>	<b>Pre-Requisite / Co-req. *</b>
PNGE 2102	Basic Mechanics	3	PHYS2107
ERSC 2101	Introduction to Geology I	4	
PNGE 3111	Chemistry for Petroleum Engineering	3	CHEM 1071
PNGE 3112	Introduction to Petroleum and Natural Gas Eng.	2	
PNGE 3212	Rock and Fluid Properties	3	PNGE 3112, PNGE 3111
ERSC 5051	Petroleum Geology	3	ERSC 2101
PNGE 4212	Drilling Technology	3	PNGE 2102, CHPE 3101, PNGE 4312*
PNGE 4312	Drilling Technology Lab	1	CHPE 3302, PNGE 4212*
PNGE 4412	Reservoir Engineering	3	PHYS 2108, PNGE 3212, ERSC 5051
GEOP 3041	General Geophysics	3	PHYS 2107, MATH 2107, ERSC 2101
PNGE 4512	Formation Evaluation	3	PNGE 4412 or GEOP 3041
PNGE 4612	Well Testing	3	PNGE 4412
PNGE 4712	Reservoir Simulation	3	PNGE 4412, PNGE 3202
PNGE 5112	Production Engineering	3	CHPE 3302, PNGE 4412
PNGE 5115	Project I	2	PNGE 4212/4512/4612/4712 CHPE 3103
PNGE 5212	Secondary & Enhanced Oil Recovery	3	PNGE 4412, CHPE 3402 or MEIE4144
PNGE 5102	Health, Safety and Environment (HSE)	3	CHPE 3103
PNGE 5412	Field Processing of Natural Gas	3	PNGE 5112
PNGE 5215	Project II	3	PNGE 5115
<b>Total</b>		<b>54</b>	

**Department of Petroleum and Chemical Engineering**  
**Degree Plan for 2011 Cohort: Petroleum & Natural Gas Engineering**  
**LIST G: MAJOR ELECTIVES (6 Credits)**

**Students should select 2 courses (6 credit hours) from the following courses:**

<b>Code</b>	<b>Title</b>	<b>Credits</b>	<b>Pre-Requisite / Co-req. *</b>
PNGE 5122	Introduction to Rock Mechanics	3	
CHPE 5207	Petroleum Refining	3	CHPE 2211 or PNGE 3111
CHPE 4102	Polymers	3	CHPE 2211 or PNGE 3111
CHPE 4302	Desalination	3	CHPE 3402 or MEIE4144
ERSC 3021	Structural Geology	3	ERSC 2102
GEOP 4001	Applied Geophysics I	3	PHYS 2101 (PHYS2107) & ERSC2101
CHEM 5537	Surfactants: Principles & Applications in the Petroleum Industry	3	CHPE 3102
GEOP 3000	Earthquakes and Society	3	ERSC 2101
<b>Total</b>		<b>6</b>	