



Degree and Study Plan

College : ENGINEERING
 Department : PETROLEUM AND CHEMICAL ENGINEERING
 Cohort : 2018
 Degree : BACHELOR OF ENGINEERING
 Major : CHEMICAL AND PROCESS ENGINEERING
 Specialization :

<u>Summary of Credits:</u>	
University Requirements (UR)	6
General Foundation Program	NC ⁺
Arabic	2
Contemporary Omani State and People	2
Oman & Islamic Civilization or Islamic Culture	2
University Electives (UE)	6
See List A	
College Requirements (CR)	32
See list B	
College Electives (CE)	3
See list C	
Departmental Requirements (DR)	26
See list D	
Departmental Electives (DE)	0
See list E	
Major Requirements (AR)	54
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: Sept. 8 th 2020
	Dean's Office	Date
	Admission and Registration	Date

Department of Petroleum and Chemical Engineering
Study Plan for 2018 Cohort (Scheme I): Chemical & Process Engineering

	Course Code	Course Title	Cr.	Pre-Requisite / Co-req. *	Cat.
Semester 1 Fall		General Foundation Program	0		UR
	Total		0		
Semester 2 Spring	HIST1010 ISLM1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0603 or 0604)	CR
	CHEM1071	General Chemistry for Engineers	3	FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105	CR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 0603 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0603 or 0604)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105	CR
	Total		14		
Semester 3 Fall	ARAB1060	Arabic	2		UR
		University Elective	2		UE
	LANC2161	English for Engineering II	3	LANC2160	CR
	SOCY1005	Contemporary Omani State and People	2		UR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	Physics for Engineering I	4	MATH2107*, FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105	CR
	Total		16		
Semester 4 Spring		College Elective	3	FPEL (0560 or 0600 or 0603 or 0604) and FPCS0101	CE
	MATH3171	Linear Algebra and Multivariate Calculus for Engineers	3	MATH2108, LANC2161	CR
	PHYS2108	Physics for Engineering II	4	PHYS2107	CR
	CHPE3102	Engineering Thermodynamics	3	CHEM1071, MATH2107	DR
	CHPE3112	Principles of Chemical Processes	3	CHEM1071	AR
	Total		16		
Semester 5 Fall	MATH4174	Differential Equations & Applications for Engineers	3	MATH2108, LANC2161	CR
	CHEM3324	Organic Chemistry for Engineering	4	CHEM1071	AR
	CHEM2102	General Chemistry II	4	CHEM1071	AR
	CHPE3302	Fluid Flow	3	CHPE3102	DR
	Total		14		

	Course Code	Course Title	Cr.	Pre-Requisite / Co-req. *	Cat.
Winter break	ENGR3006	Industrial Training I	0	CHPE3112	CR
	Total		0		
Semester 6 Spring	ECCE3015	Electrical Engineering Fundamentals	3	PHYS2107	DR
	PNGE3202	Numerical Methods	3	MATH3171,COMP2002 or ENGR2217	DR
	CHEM3348	Introduction to Chemical and Instrumental Analysis	3	CHEM2102	AR
	PNGE4101	Statistics for Engineers	3	MATH2107	DR
	CHPE3402	Heat Transfer	3	MATH4174, CHPE3302	DR
	Total		15		
Semester 7 Fall	CHPE3103	Professional Practice	2	LANC2161	DR
		Technical Elective I	3		AE
	CHPE3101	Materials Engineering	3	CHEM1071	AR
	CHPE4112	Chemical Engineering Thermodynamics	3	CHPE3102, CHPE3112	AR
	CHPE4212	Unit Operations I	3	CHPE3402	AR
	CHPE4312	Chemical Engineering Lab I	2	ENGR3006, CHPE3402	AR
	Total		16		
Semester 8 Spring	CHPE4412	Process Heat Transfer	3	CHPE3101, CHPE3402	AR
	CHPE4114	Computer Aided Design	2	PNGE3202, CHPE4512*, CHPE4612*	AR
	PNGE5103	Engineering Economy	3	MATH2107	DR
	CHPE4512	Chemical Reaction Engineering	3	CHEM3324	AR
	CHPE4612	Unit Operations II	3	CHPE4112, CHPE4212	AR
		University Elective	2		UE
	Total		16		
Summer	ENGR4006**	Industrial Training II	0	ENGR3006	CR
	Total		0		
**For non-COOP students					
COOP I Fall	CHPE5001	Cooperative Training I	0	Assistant Dean’s Approval	AR
	Total		0		
COOP II Spring	CHPE5002	Cooperative Training II	6	CHPE5001	AR
	Total		6		
Semester 9 Fall	CHPE5612	Chemical Process Safety	3	CHPE3302, PHYS2108	AR
	PNGE5203	Management for PCE	3	PNGE5103	DR
	CHPE 5412	Plant and Process Design	3	CHPE4612, PNGE5103, CHPE4412, CHPE4512	AR
	CHPE5112	Chemical Process Control	3	CHPE4512, MATH3171	AR
	CHPE4712	Chemical Engineering Lab II	2	CHPE4312, PNGE4101, CHPE4612, CHEM3348	AR
	CHPE5312	Project I	2	CHPE4114, CHPE4612, CHPE4512, CHPE3103	AR
	Total		16		

Semester 10 Spring		Technical Elective II**	3		AE
		Technical Elective III**	3		AE
		University Elective	2		UE
	CHPE5212	Chemical Engineering Lab III	2	CHPE4712, CHPE5112	AR
	CHPE5512	Project II	3	CHPE5312, CHPE5412, PNGE5203, CHPE5612	AR
	Total		13		

****For non-COOP students**

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Study Plan for 2018 Cohort (Scheme II): Chemical & Process Engineering

	Course Code	Course Title	Cr.	Pre-Requisite / Co-req. *	Cat
Semester1 Fall		General Foundation Program	0		UR
	Total		0		
Semester 2 Spring		General Foundation Program	0		UR
	Total		0		
Semester 3 Fall	HIST1010 ISLM1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0603 or 0604)	CR
	CHEM1071	General Chemistry for Engineering	3	FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105	CR
	ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0603 or 0604)	CR
	ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0603 or 0604)	CR
	MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105	CR
	Total		14		
Semester 4 Spring	ARAB1060	Arabic	2		UR
		University Elective	2		UE
	LANC2161	English for Engineering II	3	LANC2160	CR
	SOCY1005	Contemporary Omani State and People	2		UR
	MATH2108	Calculus II	3	MATH2107	CR
	PHYS2107	Physics for Engineering I	4	MATH2107*, FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105	CR
	Total		16		
Summer		College Elective	3	FPEL (0560 or 0600 or 0603 or 0604) and FPCS0101	CE
		University Elective	2		UE
	Total		5		
Semester 5 Fall	MATH3171	Linear Algebra and Multivariate Calculus for Engineers	3	MATH2108, LANC2161	CR
	MATH4174	Differential Equations for Engineers	3	MATH2108, LANC2161	CR
	CHEM2102	General Chemistry II	4	CHEM1071	AR
	CHPE3102	Engineering Thermodynamics	3	CHEM1071, MATH2107	DR
	CHPE3112	Principles of Chemical Processes	3	CHEM1071	AR
	Total		16		

	Course Code	Course Title	Cr.	Pre-Requisite / Co-req. *	Cat.
Winter break	ENGR3006	Industrial Training I	0	CHPE3112	CR
	Total		0		

Semester 6 Spring	PNGE4101	Statistics for Engineers	3	MATH2107	DR
	PNGE3202	Numerical Methods	3	MATH3171,COMP2002 or ENGR2217	DR
	CHEM3348	Introduction to Chemical and Instrumental Analysis	3	CHEM2102	AR
	CHPE3302	Fluid Flow	3	CHPE3102	DR
	CHEM3324	Organic Chemistry for Engineering	4	CHEM1071	AR
	Total		16		

Summer	CHPE3101	Materials Engineering	3	CHEM1071	AR
	CHPE3402	Heat Transfer	3	MATH4174, CHPE3302	DR
	Total		6		

Semester 7 Fall	CHPE4312	Chemical Engineering Lab I	2	ENGR3006, CHPE3402	AR
	PHYS2108	General Physics II	4	PHYS2107	CR
	CHPE4112	Chemical Engineering Thermodynamics	3	CHPE3102, CHPE3112	AR
	CHPE4212	Unit Operations I	3	CHPE3402	AR
		Technical Elective I	3		AE
	CHPE3103	Professional Practice	2	LANC2161	DR
	Total		17		

Semester 8 Spring	CHPE4412	Process Heat Transfer	3	CHPE3101, CHPE3402	AR
	ECCE3015	Electrical Engineering Fundamentals	3	PHYS2107	DR
	CHPE4114	Computer Aided Design	2	PNGE3202, CHPE4512*, CHPE4612*	AR
	PNGE5103	Engineering Economy	3	MATH2107	DR
	CHPE4512	Chemical Reaction Engineering	3	CHEM3324	AR
	CHPE4612	Unit Operations II	3	CHPE4112, CHPE4212	AR
	Total		17		

Summer	ENGR4006**	Industrial Training II	0	ENGR3006	CR
	Total		0		

****For non-COOP students**

COOP I Fall	CHPE5001	Cooperative Training I	0	Assistant Dan's Approval	AR
	Total		0		

COOP II Spring	CHPE5002	Cooperative Training II	6	CHPE5001	AR
	Total		6		

Semester 9 Fall	PNGE5203	Management for PCE	3	PNGE5103	DR
	CHPE5412	Plant and Process Design	3	CHPE4612, PNGE5103, CHPE4412, CHPE4512	AR
	CHPE5612	Chemical Process Safety	3	CHPE3302, PHYS2108	AR
	CHPE5112	Chemical Process Control	3	CHPE4512, MATH3171	AR
	CHPE4712	Chemical Engineering Lab II	2	CHPE4312, PNGE4101, CHPE4612, CHEM3348	AR
	CHPE5312	Project I	2	CHPE4114, CHPE4612, CHPE4512, CHPE3103	AR
Total			16		

Semester 10 Spring		University Elective	2		UE
		Technical Elective II**	3		AE
		Technical Elective III**	3		AE
	CHPE5212	Chemical Engineering Lab III	2	CHPE4712, CHPE5112	AR
	CHPE5512	Project II	3	CHPE5312, CHPE5412, PNGE5203, CHPE5612	AR
Total			13		

****For non-COOP students**

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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. EthnJewwl. 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

#	Course Code	Course Title	Credits	College
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 (32 credits)

Code	Title	Credits	Pre-Requisite / Co-req. *
ENGR1501	Introduction to Engineering	1	FPEL (0560 or 0600 or 0603 or 0604)
ENGR1600	Workshop I	1	FPEL (0560 or 0600 or 0603 or 0604)
LANC2160	English for Engineering I	3	FPEL (0560 or 0600 or 0603 or 0604)
LANC2161	English for Engineering II	3	LANC 2160
MATH2107	Calculus I	4	FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105
MATH2108	Calculus II	3	MATH 2107
MATH3171	Linear Algebra & Multivariate Calculus for Engineers	3	MATH2108, LANC2161
MATH4174	Differential Equations for Engineers	3	MATH2108, LANC2161
PHYS2107	Physics for Engineering I	4	MATH2107*, FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105
PHYS2108	General Physics II	4	PHYS 2107
CHEM1071	General Chemistry for Engineers	3	FPEL (0560 or 0600 or 0603 or 0604) and FPMT0105
ENGR3006	Industrial Training I	0	CHPE 3112
ENGR4006	Industrial Training II	0	ENGR3006
Total		32	

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LIST C: COLLEGE ELECTIVES (3 credits)

The student should select one course (3 credits) from the following courses

Code	Title	Credits	Pre-Requisite / Co-req. *
COMP2002	Introduction to Computer Programming for Engineers	3	FPEL (0560 or 0600 or 0603 or 0604) and FPCS0101
ENGR2217	Programming for Engineers	3	FPEL (0560 or 0600 or 0603 or 0604) and FPCS0101
Total		3	

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LIST D: DEPARTMENT REQUIREMENTS (26 credits)

Code	Title	Credits	Pre-Requisite / Co-req. *
CHPE3102	Engineering Thermodynamics	3	CHEM1071, MATH2107
CHPE3302	Fluid Flow	3	CHPE3102
CHPE3402	Heat Transfer	3	CHPE3302, MATH4174
PNGE3202	Numerical Methods	3	MATH3171, COMP2002 or ENGR2217
PNGE4101	Statistics for Engineers	3	MATH2107
PNGE5103	Engineering Economy	3	MATH2107
PNGE5203	Management for PCE	3	PNGE5103
ECCE3015	Electrical Engineering Fundamentals	3	PHYS2107
CHPE3103	Professional Practice	2	LANC2161
Total		26	

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LIST F: MAJOR REQUIREMENTS (54 credits)

Code	Title	Credits	Pre-Requisite / Co-req. *
CHPE3112	Principles of Chemical Processes	3	CHEM1071
CHEM3324	Organic Chemistry for Engineering	4	CHEM1071
CHEM2102	General Chemistry II	4	CHEM1071
CHEM3348	Introduction to Chemical and Instrumental Analysis	3	CHEM2102
CHPE4112	Chemical Engineering Thermodynamics	3	CHPE3102, CHPE3112
CHPE4212	Unit Operations I	3	CHPE3402
CHPE4312	Chemical Engineering Lab I	2	ENGR3006, CHPE3402
CHPE4412	Process Heat Transfer	3	CHPE3101, CHPE3402
CHPE4114	Computer Aided Design	2	PNGE3202, CHPE4512*, CHPE4612*
CHPE4512	Chemical Reaction Engineering	3	CHEM3324
CHPE4612	Unit Operations II	3	CHPE4112, CHPE4212
CHPE5412	Plant and Process Design	3	CHPE4612, PNGE5103, CHPE4412, CHPE4512
CHPE5112	Chemical Process Control	3	CHPE4512, MATH 3171
CHPE5612	Chemical Process Safety	3	CHPE3302, PHYS2108
CHPE4712	Chemical Engineering Lab II	2	CHPE4312, PNGE4101, CHPE4612, CHEM3348
CHPE5312	Project I	2	CHPE4114, CHPE4612, CHPE4512, CHPE3103
CHPE3101	Materials Engineering	3	CHEM1071
CHPE5212	Chemical Engineering Lab III	2	CHPE4712, CHPE5112
CHPE5512	Project II	3	CHPE5312, CHPE5412, PNGE5203, CHPE5612
Total		54	

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LIST G: MAJOR ELECTIVES (9 credits)

- **Non-COOP students should select 3 courses (9 credit hours) from the following courses (or any other course with the approval of the Department)**
- **COOP students should select one course (3 credit hours) from the following list along with (CHPE5001 and CHPE5002)**

Code	Title	Credits	Pre-Requisite / Co-req. *
CHPE4102	Polymers	3	CHEM3324 or PNGE3111
CHPE4202	Corrosion Engineering	3	CHEM2102
CHPE4302	Desalination	3	CHPE3402
CHPE4402	Natural Gas Processing	3	CHPE4112
CHPE4812	Special Topics I	3	CHPE3402
CHPE4912	Special Topics II	3	CHPE3402
CHPE5207	Petroleum Refining Processes	3	CHEM3324 or PNGE3111
CHPE5712	Process Integration, Synthesis and Simulation	3	CHPE4612
CHPE5812	Heterogeneous Catalysis and Reactor Design	3	CHPE4512
CIVL4136	Environmental Engineering I	3	CHEM1071, CHPE3302
CHPE3212	Chemical Process Industries	3	CHEM3324
CHPE5116	Biochemical Engineering	3	CHPE4512
CHPE4106	Introduction to Colloids and Interface Science	3	CHEM3324 or PNGE3111
CHPE4206	Introduction to Nanotechnology	3	CHEM3324 or PNGE3111
CHPE4306	Wastewater Treatment	3	CHEM3324 or PNGE3111
MEIE5288	Innovation and Entrepreneurship	3	PNGE5103
Total		9	