

Figure 5.1 Chemical Engineering Curriculum

FIRST TERM

Credit	Class
4	MATH 0221 Calculus I
3	CHEM 0150 (prev. Chem 0111) General Chem Eng 1
4	PHYS 0150 Phys for Eng 1
3	ENGR 0017 Intro to Eng Analysis
3	ENGCMP 0005 Comp. 1 (or a 650 or better on reading writing portion of SAT)
0	ENGR 0081 Freshman Seminar 1
17	TOTAL

SECOND TERM

Credit	Class	Pre/Co Req
4	MATH 0231 Calculus II	MATH 0221 (C- or better)
3	CHEM 0151 with Lab (prev. Chem 0115) Gen. Chem Eng 2	CHEM 0150
4	PHYS 0152 Phys for Eng 2	PHYS 0150, MATH 0231
3	ENGR 0018 Intro Eng Computing	ENGR 0017, MATH 0221
3	WOK (S&C, GH&C, A&CE)	
0	ENGR 0082 Fresh. Seminar 2	
17	TOTAL	

THIRD TERM

Credit	Class	Pre/Co Req
4	MATH 241 Calculus III	MATH 0231 (C- or better)
3	CHEM 0236 Organic Chem 1	(CHEM 0112 and 0114) or 0120 or 0115 or 0151
3	CHE 0103 Foundations ChE 1	CHEM 0120 or 0420 or 0770 or 0970 or 0102 or 0112 or 0115 or 0151 and MATH 0230 or 0235 or 0150 or 0231 and PHYS 0174 or 0475 or 0150 or 0201, CHE 0104
1	CHE 0104 Foundations Lab	CHE 0103
3	CHE 0220 Che Thermo 1	CHEM 0120 or 0420 or 0770 or 0970 or 0102 or 0112 or 0115 or 0151 and MATH 0230 or 0235 or 0150 or 0231 and PHYS 0174 or 0475 or 0150 or 0201
0	CHE 1085 Dept Seminar	
14	TOTAL	

FOURTH TERM

Credit	Class	Pre/Co Req
3	MATH 1271 Diff Eqs	MATH 0241
3	CHEM 0237 Organic Chem 2	CHEM 0236, CHEM 0238
1	CHEM 0238 Organic Lab	CHEM 0237
3	CHE 0221 Che Thermo 2	CHE 0220, CHE 0222
1	CHE 0222 Che Thermo Lab	CHE 0221
3	CHE 0105 Foundations ChE 2	CHE 0103
3	CHE 0214 Intro Che Product Design	CHEM 0112 or CHEM 0970 or CHEM 0115 or CHEM 0151 and (MATH 0230 or MATH 0231) and (PHYS 0150 or PHYS 0174)
0	CHE 1085 Dept Seminar	
16	TOTAL	

FIFTH TERM

Credit	Class	Pre/Co Req
4	ENGR 0020 Prob & Stats	MATH 0231 (C- or better)
3	CHE 0302 Transport Phenomena I	CHE 0105 and (PHYS 0175 or PHYS 0152) and (MATH 0290 or MATH 0250 or MATH 1271 or MATH 1035); CHE 0304
3	CHE 0402 Reactive Processes I	CHE 0105, CHE 0221, PHYS 0152, CHEM 0231 and (MATH 0290 or MATH 1271 or MATH 1035)
1	CHE 0404 Reactive Lab	CHE 0402
3	CHE 0315 Product Design 2	CHE 0105 and CHE 0214 and (PHYS 0175 or PHYS 0152) and (MATH 0290 or MATH 0250 or MATH 1271 or MATH 1035); CHE 0302
3	CHEM 1341 Physical Chem	PHYS 0152, MATH 0231
0	CHE 1085 Dept Seminar	
17	TOTAL	

SIXTH TERM

Credit	Class	Pre/Co Req
3	WOK (S&C, GH&C, A&CE)	
3	WOK (S&C, GH&C, A&CE)	
3	COMMRC 0052 Public Speaking	
2	CHE 0405 Reactive Processes	CHE 0402
3	CHE 0303 Transport Phenomena II	CHE 0303
1	CHE 0304 Transport Phenomena Lab	CHE 0302
3	Engr Elective	
0	CHE 1085 Dept Seminar	
18	TOTAL	

SEVENTH TERM

Credit	Class	Pre/Co Req
3	CHEM 1321 Bio Chem	CHEM 0232, CHEM 1323 or JCHE-BSE Plan
3	Advanced Science	
1	Advanced Science Lab	
5	CHE 0503 Sys Dyn & modeling	CHE 0303, CHE 0403 CHE 0504
1	CHE 0504 Sys Engr Lab	CHE 0503
3	WOK (S&C, GH&C, A&CE)	
0	CHE 1085 Dept Seminar	
16	TOTAL	

EIGHTH TERM

Credit	Class	Pre/Co Req
4	CHE 0615 Sys Process Design	
2	CHE 0603 Safety and Ethics	
3	Advance Chemical/Petroleum Elective	
3	Professional Elective	
3	WOK (S&C, GH&C, A&CE)	
0	CHE 1085 Dept Seminar	
15	TOTAL	

Figure 5.1 Chemical Engineering Curriculum

ENGINEERING ELECTIVES

Course	Pre/Co Req	Typical Term
ENGR 1103 Engineering Economics	Sophomore or beyond	Fall, Spring, Summer
ENGR 1115 Engineering Leadership	Sophomore or beyond	Fall
CE 1105 Materials of Construction		Spring
CE 1503 Intro to Environmental Engineering	CHEM 0150	Fall
CE 1610 Engineering & Sustainable Development		Spring
EE0445 Programming & Intro to Data Structures	MATH 0221, ENGR 0018	Fall
ENGR 0022 Materials	MATH 0231, PHYS 0150	Fall
ENGR 0132 Statics	MATH 0231, PHYS 0150	Fall
ME 0024 Intro ME Design	ENGR 0017	Fall
EE 0031 Linear Circuits	MATH 0231, PHYS 0151	
CHE 1096 Special Projects		Fall, Spring

PROFESSIONAL ELECTIVES

- An additional Engineering Elective
- An additional advanced science
- MATH 1181 Linear Algebra
- ENGWR 1192 Tech Writing
- ENGWR 0053 Intro to Pro Writing
- COMMRC 0083 Intercultural Comm
- Other Courses with Permission
- 3 Semester of Co-op along with a paper and presentation

Notes:

- 1) *italic bold lettering means co-req*
- 2) *Students have a minimum of 131 credits to graduate.*
- 3) *Students who do not need to take ENGCOMP 0005 (SAT-V greater than 650) will need to take another 3 credits to meet this requirement.*
- 4) *3 credits of special projects will fulfil engineering elective requirement.*
- 5) *Students need to take 5 WOK courses with MAX 2 from each world of knowledge. **The chemical engineering students are not allowed to take WOK courses from world of science and nature.***

ADVANCE CHEMICAL/PETROLEUM ELECTIVES

Credit	Class	Pre/Co Req
3	CHE 0510 Intro. Computational Fluid Dynamics	<i>CHE 0302</i>
3	CHE 0515 Catalysis	<i>CHE 0405</i>

ADVANCED SCIENCE ELECTIVE

Advance Chemistry Course w/lab

Course	Pre/Co Req	Typical Term
CHEM 0325 Analytical Chemistry	(CHEM 0112 and 0114) or CHEM 0120 or CHEM 0115 or CHEM 0151 and MATH 0004 or MATH 0221	Fall
CHEM 1327 Instrumental Analysis	CHEM 0232 and 0234 (or CHEM 0230 and 0235 and CHEM 0325)	Spring
CHEM 1131 & LAB CHEM 1133 Inorganic Chemistry	<u><i>CHEM 0234 (Waived)</i></u>	Spring

Advance Physics Course w/lab

Course	Pre/Co Req	Typical Term
PHYS 0450 + PHYS 1400 Electromagnetism+ Adv Lab	PHYS 0150 and PHYS 0152	Fall
PHYS 1300 + PHYS 1400 Quantum mechanics + Adv Lab	PHYS 0150 and PHYS 0152	Fall