

Degree Requirements for B.S. in Chemical Engineering at Wayne State University

Product and Process Engineering Option

Freshman Year

First Semester

MAT 2010 – Calculus I	4
CHM 1225 – (PS) Chemical Structure, Bonding & Reactivity	3
CHM 1230 – Chemical Principles in the Laboratory	1
ENG 1020 – (BC) Introductory College Writing	4
B E 1200 – (CL) Basic Engineering I – Design in Engineering	3
UGE 1000 – (GE) Information Power	1
Total 16	

Second Semester

MAT 2020 – Calculus II	4
CHM 1240 – Principles of General/Organic Chemistry	4
CHM 1250 – General/Organic Lab	1
PHY 2175 – (PS) General Physics	4
B E 1300 – Basic Engineering II: Materials Science for Engg. Applications	3
B E 1310 – Basic Engineering II: Materials Science for Engg. Applications Lab	1
Total 17	

Sophomore Year

First Semester

MAT 2030 – Calculus III	4
PHY 2185 – General Physics	4
B E 2100 – Basic Engineering III: Probability and Statistics in Engineering for Engineering Applications	3
BIO 1510 – (LS) Basic Life Mechanisms	3
PHI 1100 – (PL) Contemporary Moral Issues	3
Total 17	

Second Semester

MAT 2150 – Differential Equations and Matrix Algebra	4
CHE 2800 – Material and Energy Balances	4
B E 2550 – Basic Engineering IV – Computer Programming and Numerical Methods in Engineering	3
CHM 2220 – Organic Chemistry II	3
ECO 2020 – (SS) Principles of Macroeconomics	3
English Proficiency Exam	0
Critical Thinking Exam	0
Total 17	

Junior Year

First Semester

CHE 3200 – Fluid Flow & Heat Transfer	4
CHE 3300 – Thermodynamics: Chemical Equilibria	4
CHM 5600 – Survey of Biochemistry or CHM 5440 - Physical Chemistry II *	3 - 4
ENG 3050 – (IC) Technical Communication I: Report Writing	3
Historical Studies Elective- (HS)	3
Total 17 - 18	

Second Semester

CHE 3220 – Measurements Laboratory	2
CHE 3400 – Kinetics and Reactor Design	4
CHE 3800 – Mass Transfer and Separation Processes	4
American Society and Institutions Elective (AI)	3
ENG 3060 – (OC) Technical Communication II: Writing & Speaking	3
CHE 4260 – Chemical Engineering Seminar I	0
Total 16	

Senior Year

First Semester

CHE 3820 – Chemical Engineering Laboratory	2
CHE 4200 – Product and Process Design	3
CHE 4600 – Process Dynamics and Simulation	2
CHE 4860 – Chemical Engineering Seminar II	1
Chemical Engineering Technical Elective	6
Total 14	

Second Semester

Chemical Engineering Technical Electives	4 - 5
CHE 4800 – (WI) Chemical Process Integration	3
CHE 6570 – Safety in the Chemical Process Industry	3
Foreign Culture Elective (FC)	3
Visual & Performing Arts Elective (VP)	3
Total 16-17	

Total Credits 131

*Students may elect [CHM 5440 and 10 Technical Elective Credits] or [CHM 5600 and 11 Technical Elective Credits].