

Sample Schedule for ChemE/BME Additional Major
Updated 11/1/2023

ChemE		ChemE + BME	
First year	Units	First year	Units
Fall		Fall	
21-120 Differential & Integral Calculus	10	21-120 Differential & Integral Calculus	10
76-xxx Designated Writing Course	9	76-xxx Designated Writing Course	9
99-101 Computing@Carnegie Mellon	3	99-101 Computing@Carnegie Mellon	3
06-100 Introduction to Chemical Engineering	12	06-100 Introduction to Chemical Engineering or 42-101 Intro to BME	12
09-105 Introduction to Modern Chemistry I	10	09-105 Introduction to Modern Chemistry I or 03-121 Modern Biology	9-10
Total:	44	Total:	43-44
Spring		Spring	
21-122 Integration, Differential Equations & Approximation	10	21-122 Integration, Differential Equations & Approximation	10
xx-xxx Introductory Engineering Elective (other than ChE)	12	06-100 Introduction to Chemical Engineering or 42-101 Intro to BME	12
33-141 Physics I for Engineering Students	12	33-141 Physics I for Engineering Students	12
xx-xxx General Education Course	9	xx-xxx General Education Course	9
		09-105 Introduction to Modern Chemistry I or 03-121 Modern Biology	9-10
Total:	43	Total:	52-53
Second year		Second year	
Fall		Fall	
21-254 Linear Algebra and Vector Calculus for Engineers	11	21-254 Linear Algebra and Vector Calculus for Engineers	11
06-223 Chemical Engineering Thermodynamics	12	06-223 Chemical Engineering Thermodynamics	12
06-222 Sophomore Chemical Engineering Seminar	1	06-222 Sophomore Chemical Engineering Seminar	1
09-106 Modern Chemistry II	10	09-106 Modern Chemistry II	10
xx-xxx Computer Sci./Physics II**	10-12	xx-xxx Computer Sci./Physics II**	10-12
xx-xxx General Education Course	9	42-202 Physiology or 42-203 BME Laboratory	9
39-210 Experiential Learning I	0	39-210 Experiential Learning I	0
Total:	53-55	Total:	53-55
Spring		Spring	
06-261 Fluid Mechanics	9	06-261 Fluid Mechanics	9
06-262 Mathematical Methods of Chemical Engineering	12	06-262 Mathematical Methods of Chemical Engineering	12
09-221 Lab I: Introduction to Chemical Analysis	12	09-221 Lab I: Introduction to Chemical Analysis	12
xx-xxx Computer Sci./Physics II**	10-12	xx-xxx Computer Sci./Physics II**	10-12
xx-xxx General Education Course	9	42-202 Physiology or 42-203 BME Laboratory	9
39-220 Experiential Learning II	0	39-220 Experiential Learning II	0
		42-201 Professional Issues in BME	3
Total:	52-54	Total:	55-57
Third year		Third year	
Fall		Fall	
06-325 Numerical Methods & Machine Learning for ChemE	6	06-325 Numerical Methods & Machine Learning for ChemE	6
06-326 Optimization, Modeling, & Algorithms	6	06-326 Optimization, Modeling, & Algorithms	6
06-322 Junior ChemE Seminar	2	42-302 BME Systems Modeling and Analysis or 42-xxx BME Track Elective	9
06-323 Heat and Mass Transfer	9	06-323 Heat and Mass Transfer	9
09-217/219 Organic Chemistry I or Modern Organic Chemistry	9-10	09-217/219 Organic Chemistry I or Modern Organic Chemistry	9-10
06-310 Molecular Foundations of ChemE	9	06-310 Molecular Foundations of ChemE	9
xx-xxx General Education Course	9	xx-xxx General Education Course	9
39-310 Experiential Learning III	0	39-310 Experiential Learning III	0
Total:	50-51	Total:	57-58
Spring		Spring	
06-361 Unit Operations of Chemical Engineering	9	06-361 Unit Operations of Chemical Engineering	9
06-363 Transport Process Laboratory	9	06-363 Transport Process Laboratory	9
06-364 Chemical Reaction Engineering	9	06-364 Chemical Reaction Engineering	9
xx-xxx Advanced Chemistry Elective	9	xx-xxx Advanced Chemistry Elective	9
xx-xxx Unrestricted Elective	9	42-302 BME Systems Modeling and Analysis or 42-xxx BME Track Elective	9
xx-xxx General Education Course	9	xx-xxx General Education Course	9
Total:	54	Total:	54
Forth year		Forth year	
Fall		Fall	
06-421 Chemical Process System Design	12	06-421 Chemical Process System Design	12
06-423 Unit Operations Laboratory	9	06-423 Unit Operations Laboratory	9
xx-xxx Unrestricted Elective	9	42-401 Foundations of BME Design	6
xx-xxx Unrestricted Elective	9	42-xxx BME Track Elective	9
xx-xxx General Education Course	9	xx-xxx General Education Course	9
		xx-xxx General Education Course	9
Total:	48	Total:	54
Spring		Spring	
06-463 Chemical Product Design	9	42-402 BME Design	9
06-464 Chemical Engineering Process Control	9	06-464 Chemical Engineering Process Control	9
xx-xxx Unrestricted Elective	9	42-xxx BME Track Elective	9
xx-xxx Unrestricted Elective	9	xx-xxx General Education Course	9
xx-xxx General Education Course	9	xx-xxx General Education Course	9
Total:	45	Total:	45

Minimum no. of units to graduate: 391 (ChemE), 414 (BME/ChemE)

Note: This sample schedule serves as a starting point to help students plan their class schedules. Students are advised and strongly encouraged to discuss their plans with the academic advisors.