

Sample Schedule for ChemE/BME Additional Majors in the BMTE Track
Updated 4/3/22

Chemical Engineering
First Year

	Fall	Units
21-120	Differential & Integral Calculus	10
76-xxx	Designated Writing Course	9
99-101	Computing@Carnegie Mellon	3
06-100	Introduction to Chemical Engineering	12
09-105	Introduction to Modern Chemistry I	10
	Total:	44

	Spring	Units
21-122	Integration, Differential Equations & Approximation	10
xx-xxx	Introductory Engineering Elective	12
33-141	Physics I for Engineering Students	12
xx-xxx	General Education Course	9
	Total:	43

Second Year

	Fall	Units
21-254	Linear Algebra and Vector Calculus for Engineers	11
06-223	Chemical Engineering Thermodynamics	12
06-222	Sophomore Chemical Engineering Seminar	1
09-106	Modern Chemistry II	10
xx-xxx	Computer Sci./Physics II**	10 or 12
xx-xxx	General Education Course	9
39-210	Experiential Learning I	0
	Total:	53-55

	Spring	Units
06-261	Fluid Mechanics	9
06-262	Math. Methods of Chem. Engineering	12
09-221	Lab I: Introduction to Chemical Analysis	12
xx-xxx	Computer Sci./Physics II**	10 or 12
xx-xxx	General Education Course	9
39-220	Experiential Learning II	0
	Total:	52-54

Third Year

	Fall	Units
06-310	Molecular Foundations of ChemE	9
06-322	Junior ChemE Seminar	2
06-323	Heat and Mass Transfer	9
06-325	Numerical Methods & Machine Learning for ChemE	6
06-326	Optimization, Modeling, & Algorithms	6
09-217/219	Organic Chemistry I or Modern Organic Chemistry	9 or 10
xx-xxx	General Education Course	9
39-310	Experiential Learning III	0
	Total:	50-51

	Spring	Units
06-361	Unit Operations of ChemE	9
06-363	Transport Process Laboratory	9
06-364	Chemical Reaction Engineering	9
xx-xxx	Advanced Chemistry Elective	9
xx-xxx	Unrestricted Elective	9
xx-xxx	General Education Course	9
	Total:	54

Fourth Year

	Fall	Units
06-421	Chemical Process System Design	12
06-423	Unit Operations Laboratory	9
xx-xxx	Unrestricted Elective	9
xx-xxx	Unrestricted Elective	9
xx-xxx	General Education Course	9
	Total:	48

	Spring	Units
06-463	Chemical Product Design	9
06-464	Chemical Engineering Process Control	9
xx-xxx	Unrestricted Elective	9
xx-xxx	Unrestricted Elective	9
xx-xxx	General Education Course	9
	Total:	45

Chemical Engineering + BME
First Year

	Fall	Units
21-120	Differential & Integral Calculus	10
76-xxx	Designated Writing Course	9
99-101	Computing@Carnegie Mellon	3
06-100 or 42-101	Intro to Chemical Engineering or Intro to Biomedical Engineering	12
09-105 or 03-121	Introduction to Modern Chemistry I or Modern Biology	9-10
	Total:	43-44

	Spring	Units
21-122	Integration & Approximation	10
06-100 or 42-101	Intro to Chemical Engineering or Intro to Biomedical Engineering	12
33-141	Physics I for Engineering Students	12
09-105 or 03-121	Introduction to Modern Chemistry I or Modern Biology	9-10
xx-xxx	General Education Course	9
	Total:	52-53

Second Year

	Fall	Units
21-254	Linear Algebra and Vector Calculus for Engineers	11
06-223	Chemical Engineering Thermodynamics	12
06-222	Sophomore Chemical Engineering Seminar	1
09-106	Modern Chemistry II	10
xx-xxx	Computer Sci./Physics II**	10 or 12
42-202 or 42-203	Physiology or BME Laboratory	9
39-210	Experiential Learning I	0
	Total:	53-55

	Spring	Units
06-261	Fluid Mechanics	9
06-262	Math: Methods of Chem. Engineering	12
09-221	Lab I: Introduction to Chemical Analysis	12
xx-xxx	Computer Sci./Physics II**	10 or 12
42-201	Professional Issues in BME	3
42-202 or 42-203	Physiology or BME Laboratory	9
39-220	Experiential Learning II	0
	Total:	55-57

Third Year

	Fall	Units
06-310	Molecular Foundations of ChemE	9
06-323	Heat and Mass Transfer	9
06-325	Numerical Methods & Machine Learning for ChemE	6
06-326	Optimization, Modeling, & Algorithms	6
09-217/219	Organic Chemistry I or Modern Organic Chemistry	9 or 10
42-xxx or 42-302	BMTE Track Elective or BME Systems Modeling and Analysis	9
xx-xxx	General Education Course	9
39-310	Experiential Learning III	0
	Total:	57-58

	Spring	Units
06-361	Unit Operations of ChemE	9
06-363	Transport Process Laboratory	9
06-364	Chemical Reaction Engineering	9
42-xxx or 42-302	BMTE Track Elective or BME Systems Modeling and Analysis	9
xx-xxx	Advanced Chemistry Elective	9
xx-xxx	General Education Course	9
	Total:	54

Fourth Year

	Fall	Units
06-421	Chemical Process System Design	12
06-423	Unit Operations Laboratory	9
42-401	Foundations of BME Design	6
42-xxx	BMTE Track Elective	9
xx-xxx	General Education Course	9
xx-xxx	General Education Course	9
	Total:	54

	Spring	Units
06-464	Chemical Engineering Process Control	9
42-402	BME Design	9
42-xxx	BMTE Track Elective	9
xx-xxx	General Education Course	9
xx-xxx	General Education Course	9
	Total:	45

Minimum no. of units to graduate: 391 (ChemE), 415 (BME/ChemE)