SAMPLE 4-YEAR PLAN: CHEMISTRY-BIOCHEMISTRY B.S.

Northern Kentucky University

This is one way a student can complete this program in four years if they require no developmental courses (Mathematics ACT ≥ 25, English ACT ≥ 18, and Reading ACT ≥ 20 or their equivalences). Should a student not meet these requirements, additional developmental courses not listed here will be necessary.

MAJOR: Chemistry

TRACK: Biochemistry

FIRST YEAR • *Meet with freshman specialist; map personal four-year plan.* • *Make use of student support: tutoring, SI, writing center, mathematics lab.* • *Investigate undergraduate research, coop option.* • *Join student clubs.*	**Fall Semester**		**Spring Semester**	
	CHE 120 General Chemistry I	3	CHE 121 General Chemistry II	3
	CHE 120L General Chemistry I Laboratory	1	CHE 121L General Chemistry II Laboratory	1
	MAT 129 Calculus I[a]	4	MAT 229 Calculus II[a]	5
	Gen Ed: Communication; Written	3	Gen Ed: Communication; Oral	3
	BIO 150 Introduction to Biology I	4	BIO 151 Introduction to Biology II	4
	BIO 150L Introduction to Biology I Laboratory	0	BIO 151L Introduction to Biology II Laboratory	0
	CHE 125 Intro to Chemistry and Biochemistry	1		
	TOTAL	**16**	**TOTAL**	**16**
SECOND YEAR • *Meet with your ne area-specific advisor.* • *Join research group.* • *Investigate summer research, coop or internship opportunities.* • *Begin to gain career experience appropriate for goals.*	**Fall Semester**		**Spring Semester**	
	CHE 310 Organic Chemistry	3	CHE 311 Organic Chemistry II	3
	CHE 310L Organic Chemistry I Laboratory	1	CHE 311L Organic Chemistry II Laboratory	1
	PHY 211 General Physics I with Laboratory[b]	5	PHY 213 General Physics II with Laboratory[b]	5
	BIO 349 Genetics	4	CHE 391W Chemical Information and Writing	3
	BIO 349L Genetics Laboratory	0	Biochemistry track elective or elective	4
	Gen Ed	3		
	TOTAL	**16**	**TOTAL**	**16**
THIRD YEAR • *Work closely with advisor to fine tune career plans.* • *Begin to investigate graduate/professional programs.* • *Register for entrance exams (GRE, MCAT, PCAT).* • *Work with Career Services to polish resume, apply for coops.* • *Meet with pre-med board, if appropriate.*	**Fall Semester**		**Spring Semester**	
	CHE 482 Biochemistry I	3	CHE 483 Biochemistry II	3
	CHE 482L Biochemistry I Laboratory	1	CHE 483L Biochemistry II Laboratory	1
	Biochemistry track elective or elective	4	CHE 492 Research: Chemistry	1
	CHE 340 Analytical Chemistry	3	Biochemistry track elective or elective	4
	CHE 340L Analytical Chemistry Laboratory	2	Gen Ed (two courses)	6
	Gen Ed	3		
	TOTAL	**16**	**TOTAL**	**15**
FOURTH YEAR • *Attend job fairs, conduct mock interviews with Career Services.* • *Contact professors for letters of*	**Fall Semester**		**Spring Semester**	
	CHE 360 Physical Chemistry I	3	CHE 361 Physical Chemistry II	3
	CHE 400 Chemistry Seminar	1	CHE 362L Physical Chemistry Laboratory	2
	CHE 396 Practicum: Chemistry	1	CHE 492 Research: Chemistry	1

recommendation. • *Gather application materials, apply early to desired programs.* • *Plan and complete senior seminar, honors thesis.* • *Celebrate your graduation!*	Laboratory			
	Electives	5	Elective 300 level or above	3
	Gen Ed	3	Gen Ed	3
	TOTAL	**13**	**TOTAL**	**12**
			GRAND TOTAL OF CREDITS	**120**

Notes:

[a] Alternatively, the calculus requirement can be met by taking calculus A, B, and C (MAT 128, MAT 227, and MAT 228).

[b] Alternatively, university physics I and II (PHY 220 and PHY 222) may be taken. If these courses are chosen, they can be taken spring/fall or fall/fall; PHY 222 is offered only in the fall, but PHY 220 is offered fall and spring.

[c] Students considering graduate school, professional school or high school teaching should strongly consider taking chemistry practicum, especially in general chemistry. This course allows the student to gain valuable teaching experience (for students who will teach at the high school or college level) and it provides an excellent opportunity to continue to keep general chemistry skills sharpened (for students planning to take entrance exams such as the MCAT, PCAT, and DAT).

All majors should begin their mathematics sequence in order to complete calculus II as soon as possible. All majors should also take the chemistry writing course (CHE 391W) as soon as they complete their first 300 level or above chemistry course (usually CHE 310 or CHE 340), as this course is a prerequisite for many other 300- and 400- level lab courses. Secondary education majors also completing the B.S. in chemistry degree need to take the physical chemistry sequence (CHE 360, CHE 361, and CHE 362L) during their junior year in order to accommodate their student teaching responsibilities during their senior year.

Pre-pharmacy students benefit from taking biochemistry and physical chemistry in their junior years so that they can more easily matriculate pharmacy courses back to NKU to complete a bachelor's degree in chemistry should they enter pharmacy school a year early.

Pre-professional majors should work closely with their advisors to ensure that electives are chosen to meet the entrance requirements of their particular postbaccalaureate programs.

In completing the requirements for the B.S. chemistry-biochemistry track degree, students also satisfy general education requirements in communication-written II (CHE 391W), natural sciences (CHE 120 and CHE 120L, PHY 211 or PHY 220) and mathematics (MAT 128 or MAT 129).