BIOCHEMISTRY

Plan of Study

Below is a sample plan of study that illustrates one way to achieve the program requirements. Any given student's plan of study may differ based on a variety of factors (e.g., advanced credit, placement exams, adding a minor). Enrolled students will work with their academic advisor; utilize the degree audit/planner to create a specific plan of study.

Course	Title	Hours
Freshman		
Fall		
CHEM 111	General Chemistry I [1]	3
CHEM 111L	General Chemistry I Lab [1]	1
MA 111	Calculus I	5
RHIT 100	Foundations for Rose-Hulman Success	1
Select one of the following:		4
HUM H190	First-Year Writing Seminar	
HSSA Elective		
	Hours	**14**
Winter		
CHEM 113	General Chemistry II [1]	3
MA 112	Calculus II	5
PH 111	Physics I	4
PH 111L	Physics I Lab	0
BIO 110	Cell Structure and Function	4
	Hours	**16**
Spring		
CHEM 115	General Chemistry III	3
MA 113	Calculus III	5
PH 112	Physics II	4
PH 112L	Physics II Lab	0
HSSA Elective		4
	Hours	**16**
Sophomore		
Fall		
CHEM 251	Organic Chemistry I	3
CHEM 251L	Organic Chemistry I Laboratory	1
CHEM 225	Analytical Chemistry	3
MA 223 or MA 381	Engineering Statistics or Introduction to Probability with Applications to Statistics	4
BIO 210	Mendelian & Molecular Genetics	4
	Hours	**15**
Winter		
CHEM 200	Career Preparation	1
CHEM 252	Organic Chemistry II	3
CHEM 252L	Organic Chemistry II Laboratory	1
CHEM 291	Introduction to Chemical Research	3
Math/Science Elective [2]		4
BIO 220	Microbiology	4
	Hours	**16**
Spring		
CHEM 253	Organic Chemistry III	3
CHEM 253L	Organic Chemistry III Laboratory	1
HSSA Elective		4
BIO 230	Cell Biology	4
Select one of the following:		4
ENGL H290	Technical & Professional Communication	
HSSA Elective		
	Hours	**16**
Junior		
Fall		
PH 113	Physics III	4
PH 113L	Physics III Lab	0
CHEM 330	Biochemistry I	4
CHEM 361	Physical Chemistry I [3]	4
CHEM 395	Chemistry Seminar	0
CHEM 490	Chemical Research	2
HSSA Elective		4
	Hours	**18**
Winter		
CHEM 326	Bioanalytical Chemistry	4
CHEM 362	Physical Chemistry II [3]	4
CHEM 331	Biochemistry II	4
CHEM 490	Chemical Research	2
HSSA Elective		4
	Hours	**18**
Spring		
CHEM 463	Quantum Chemistry & Molecular Spectroscopy	4
CHEM 430	Advanced Biochemistry	4
CHEM 433	Biochemistry Laboratory	1
CHEM 490	Chemical Research	2
CHEM 327	Advanced Analytical Chemistry	4
	Hours	**15**
Senior		
Fall		
CHEM 441	Inorganic Chemistry I	4
CHEM 495	Chemistry Seminar	0
CHEM Advanced Chemistry Elective [4]		4
HSSA Elective		4
Free Elective		4
	Hours	**16**
Winter		
CHEM 496	Chemistry Seminar	0
CHEM Advanced Chemistry Elective [4]		3
Free Elective		4
HSSA Elective		4
Advanced Biology, Chemistry, Biochemistry Elective [5]		4
	Hours	**15**
Spring		
CHEM 491	Senior Thesis	1
CHEM 497	Senior Presentation	1
HSSA Elective		4
Free Elective		4
Free Elective		4
	Hours	**14**
	Total Hours	**189**

1. Subject to approval, CHEM 112 General Chemistry Honors may be substituted for CHEM 111 General Chemistry I and CHEM 113 General Chemistry II.
2. Math/ScienceElective defined as 200 level or above coursework with any of the following prefixes: BIO, BMTH, CSSE, GEOL, ECONS, MA, or PH
3. CHE 303 Chemical Engineering Thermodynamics, CHE 304 Multi-Component Thermodynamics and CHEM 360 Introduction to Physical Chemistry for Engineers may be substituted for CHEM 361 Physical Chemistry I and CHEM 362 Physical Chemistry II.

[4] Advanced CHEM Elective defined as 300 level or above coursework with CHEM prefix.
[5] Advanced BIO Elective defined as 300 level or above coursework with BIO prefix.

Notes

Two degree or double major programs in biochemistry and either chemistry or biochemistry and molecular biology is not allowed.

Students must complete at least 3 credits of CHEM 490 Chemical Research prior to the Spring quarter of their senior year.

Students may count up to 8 credits of research toward their electives, of which no more than 2 credits can come from CHEM 290 Chemical Research.