

Biochemistry- Bachelor of Science

For information, contact the Department of Chemistry and Biochemistry, 160 Hughes Laboratories, 513-529-2813.

This major is usually chosen by students who want to enter the chemical industry or graduate school in chemistry, biochemistry, or related areas. Chemistry and required related courses cannot be taken on a credit/no-credit basis.

Program Requirements

(44-45 semester hours, plus 27-28 related hours)

Code	Title	Credit Hours
Core Courses		
Select one of the following:		3-4
CHM 141	College Chemistry	
CHM 141H	College Chemistry	
CHM 141R	College Chemistry	
Select one of the following:		3
CHM 142	College Chemistry	
CHM 142M	College Chemistry for Majors	
CHM 142H	College Chemistry	
Select one of the following:		2
CHM 144M	College Chemistry Laboratory for Majors	
CHM 144	College Chemistry Laboratory (with approval)	
Select one of the following:		2
CHM 145M	College Chemistry Laboratory	
CHM 145	College Chemistry Laboratory (with approval)	
Select the following:		
CHM 251 & CHM 252	Organic Chemistry for Chemistry Majors and Organic Chemistry for Chemistry Majors	6
or CHM 241 & CHM 242	Organic Chemistry and Organic Chemistry	
CHM 254 & CHM 255	Organic Chemistry Laboratory for Chemistry Majors and Organic Chemistry Laboratory for Chemistry Majors	4
CHM 375	Analytical Chemistry for Majors	3
CHM 432	Fundamentals of Biochemistry	4
CHM 438	Biochemistry Laboratory	2
CHM 471	Biophysical Chemistry I ¹	3
or CHM 451	Physical Chemistry for Chemistry Majors	
CHM 472	Biophysical Chemistry II ¹	3
or CHM 452	Physical Chemistry for Chemistry Majors	
CHM 491	Chemistry in Societal Issues	3
or CHM 492	Independent Research Capstone in Chemistry	

Advanced Chemistry Coursework

An additional six (6) advanced credit hours in CHM courses are required, of which at least 4 credit hours (2 offerings) should be from CHM 430, Special Topics in Biochemistry, or CHM 436

CHM 430	Topics in Biochemistry	
CHM 436	Principles in Fermentation	
The remaining topics can be chosen from:		
CHM 411	Learning Theories in Chemistry	
CHM 415	Misconceptions in Chemistry	
CHM 417	Advanced Inorganic Chemistry	
CHM 419	Synthesis Lab	
CHM 425	Advanced Organic Chemistry	
CHM 426	Spectroscopic Identification of Structure	
CHM 429	Polymer Chemistry	
CHM 450	Topics in Organic Chemistry	
CHM 454	Instrumental Analysis	
CHM 456	Chemical Measurements II	
CHM 460	Topics in Analytical Chemistry	

Related Hours (27-28 required)

MTH 151	Calculus I	4
MTH 251	Calculus II	4-5
or MTH 249	Calculus II	
PHY 181 & PHY 183	General Physics I and General Physics Laboratory I	5
PHY 182 & PHY 184	General Physics II and General Physics Laboratory II	5

Additional Courses

Select a minimum of three credit hours in mathematics or statistics from the following:

MTH 222	Introduction to Linear Algebra	
MTH 231	Elements of Discrete Mathematics	
MTH 245	Differential Equations for Engineers	
MTH 252	Calculus III	
MTH 347	Differential Equations	
STA 301	Applied Statistics	
or STA 333	Nonparametric Statistics	
or STA 363	Introduction to Statistical Modeling	
BIO 466	Bioinformatics Computing Skills	
Select a minimum of six hours of the following:		6
BIO/MBI 116	Biological Concepts: Structure, Function, Cellular, and Molecular Biology	
BIO 203	Introduction to Cell Biology	
BIO 342	Genetics	
BIO/MBI 485	Bioinformatics Principles	
PHY 421	Molecular and Cellular Biophysics	
PHY 422		

Total Credit Hours **71-73**

¹ CHM 471 & CHM 472 are preferred