CHEMISTRY | BACHELOR OF SCIENCE: CHEMISTRY

Program Summary

Code	Title	Hours
General Education		34
Major Courses		46
Major Electives		3-5
Cognates		22
Open Electives [1]		13-15
Total Hours		**120**

[1] Open electives are the credit hours required to reach a minimum of 120 total hours and 45 upper-level hours. The number listed assumes all courses are completed at FHSU as listed. This number may vary if students transfer courses, or have individual substitutions allowed. Students should speak with their advisor if either situation applies to determine if the number will vary, and to ensure they enroll in a minimum of 45 upper-level hours.
Students entering within 1 year of high school graduation will take UNIV 101 Freshman Seminar and may apply that hour in the open elective category.

Program Requirements

General Education

All undergraduate degrees require completion of the Kansas Systemwide General Education (https://catalog.fhsu.edu/general-education/).

Courses identified with GE on this page may satisfy a general education requirement in addition to the identified degree requirement. Students who apply a degree requirement to satisfy a general education requirement will typically add an equal number of hours to the the university elective category. This flexibility may allow you to complete a minor or certificate within the 120 hour degree. Transfer students and students majoring in programs with approved exceptions (https://www.fhsu.edu/general-education/documents/fhsu-gen-ed-transfer-exceptions-explainer1.pdf) are especially encouraged to select these courses in completing General Education requirements to maximize the likelihood of completing the degree with 120 credit hours.

Code	Title	Hours
General Education		**34-35**

Code	Title	Hours
Core Courses		
CHEM 101	Orientation to Chemistry	1
CHEM 120 & 120L	University Chemistry I and University Chemistry Laboratory I GE	5
CHEM 122 & 122L	University Chemistry II and University Chemistry Laboratory II GE	5
CHEM 340 & 340L	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 342 & 342L	Organic Chemistry II and Organic Chemistry Laboratory II	5
CHEM 350 & 350L	Chemical Analysis and Chemical Analysis Laboratory	5
CHEM 632 & 632L	Physical Chemistry: Chemical Thermodynamics and Physical Chemistry Laboratory I	5
CHEM 634/634L	Physical Chem: Quantum Mechanics & Chem Kinetics	3
CHEM 656/656L	Instrumental Analysis	3
CHEM 662 & 662L	Biochemistry I and Biochemistry Laboratory I	5
CHEM 666	Inorganic Chemistry	3
CHEM 675	Seminar in Chemistry	1
Directed Electives		
Select one of the following Advanced Chemistry Electives:		3-5
CHEM 352 & 352L	Environmental Chemistry and Environmental Chemistry Laboratory	
CHEM 382	Introduction to Forensic Science	
CHEM 644 & 644L	Organic Spectroscopic Analysis and Organic Spectroscopic Analysis Laboratory	
CHEM 646	Theories of Organic Chemistry	
CHEM 664 & 664L	Biochemistry II and Biochemistry Laboratory II	
Cognates		
MATH 234	Analytic Geometry and Calculus I GE	5
MATH 235	Analytic Geometry and Calculus II	5
MATH 236	Analytic Geometry and Calculus III	3
PHYS 211/211L	Engineering Physics I GE	4
PHYS 212 & 212L	Engineering Physics II and Engineering Physics II Laboratory GE	5
Total Hours		**71-73**

Degree Requirements

Code	Title	Hours
All bachelor degrees require:		
GPA of 2.0 on FHSU courses & 2.0 on all coursework (Higher program requirements prevail over the 2.0 when set)		
A minimum of 30 hours earned from FHSU with a grade of D, C, B, or A		
Successful completion of an upper division Writing and Information Literacy course (Most majors contain a course designated)		
A minimum of 45 hours of recognized upper division credit		
A minimum of 120 hours of recognized college credit		

Reach out to our faculty mentors for information on a chemistry emphasis:

- **Biological Chemistry Concentration: Dr. James Balthazor (jrbalthazor@fhsu.edu) or Dr. Krisztina Bencze (kzbencze@fhsu.edu)**
- **Forensic Science Concentration: Dr. James Balthazor (jrbalthazor@fhsu.edu)**