Chemistry, BS

Bachelor of Science in Chemistry Degree Program Requirements

Complete Core Curriculum Listing at https://catalog.pvamu.edu/universitycorecurriculum/

Core Curriculum 42 Credit Hours		
Communication (Select Two)		6
Mathematics		3
MATH 1316	Trigonometry	
Life and Physical Sciences		6
PHYS 2325	University Physics I	
or PHYS 1301	General Physics I	
PHYS 2326	University Physics II	
or PHYS 1302	General Physics II	
Language, Philosophy, and Culture (Select One)		3
Creative Arts (Select One)		3
American History (Select Two)		6
Government/Political Science		6
POSC 2305	American Government	
POSC 2306	Texas Government	
Social and Behavioral Sciences (Select One)		3
Component Area Option One (Select One)		3
Component Area Option Two (Select One)		3
Departmental Requirements (Foreign Language Elective - one language)		**6**
Major Requirements [1]		**36**
CHEM 1203	General Chemistry Lab	
CHEM 1303	General Inorganic Chemistry I	
CHEM 1204	General Inorganic Chemistry Laboratory II	
CHEM 1304	General Inorganic Chemistry II	
CHEM 2201	Quantitative Analysis	
CHEM 2211	Quantitative Analysis Lab	
CHEM 2203	Organic Chemistry Lab I	
CHEM 2303	General Organic Chemistry I	
CHEM 2204	Organic Chemistry Lab II	
CHEM 2304	General Organic Chemistry II	
CHEM 3341	Physical Chemistry	
CHEM 3242	Physical Chemistry Lab	
CHEM 4303	Biochemistry	
CHEM 4105	Research	
CHEM 4305	Instrumental Analysis	
Support Area		**13**
BIOL 1501	General Biology	
MATH 2413	Calculus with Analytic Geometry I	
MATH 2414	Calculus with Analytic Geometry II	
Select one of the following concentrations from below		**23**
Total Hours		**120**

Traditional Chemistry Concentration

CHEM 3342	Physical Chemistry	3
CHEM 3243	Physical Chemistry Lab	2
CHEM 4100	Journal Reading and Chemical Literature	1
CHEM 4205	Instrumental Analysis Lab	2

CHEM 4106	Research	1
CHEM 4306	Inorganic Chemistry	3
MATH 3401	Calculus III	4
PHYS 1101	General Physics Lab I	1
PHYS 1102	General Physics Lab II	1
Restricted electives (Select 5 hours from the courses below:)		**5**
BIOL 1102	Biology Seminar	
BIOL 3401	Human Physiology and Anatomy	
BIOL 3402	Human Physiology and Anatomy	
BIOL 3403	General Microbiology	
CHEM 3350	Introduction to Cosmetic Chemistry	
CHEM 3351	Introduction to Green and Sustainable Chemistry Principles	
CHEM 4302	Forensic Chemistry	
CHEM 4204	Biochemistry Laboratory	
Total Hours		**23**

Biomedical Science Concentration

BIOL 1502	General Biology	5
BIOL 3401	Human Physiology and Anatomy	4
MATH 1342	Elementary Statistics	3
PHYS 1101	General Physics Lab I	1
PHYS 1102	General Physics Lab II	1
Restricted Electives (Select 9 hours from the courses below):		**9**
BIOL 1102	Biology Seminar	
BIOL 2416	Genetics	
BIOL 3402	Human Physiology and Anatomy	
BIOL 3403	General Microbiology	
CHEM 3243	Physical Chemistry Lab	
CHEM 3342	Physical Chemistry	
CHEM 3350	Introduction to Cosmetic Chemistry	
CHEM 3351	Introduction to Green and Sustainable Chemistry Principles	
CHEM 4100	Journal Reading and Chemical Literature	
CHEM 4205	Instrumental Analysis Lab	
CHEM 4106	Research	
CHEM 4306	Inorganic Chemistry	
Total Hours		**23**

Forensic Science Concentration

CHEM 4100	Journal Reading and Chemical Literature	1
CHEM 4302	Forensic Chemistry	3
CHEM 4203	Forensic Chemistry Lab [2]	2
CHEM 4306	Inorganic Chemistry	3
MATH 1342	Elementary Statistics	3
PHYS 2125	University Physics Lab I	1
PHYS 2126	University Physics Lab II	1
Restricted Electives (Select 9 hours form the following courses):		**9**
CHEM 3350	Introduction to Cosmetic Chemistry	
CHEM 3351	Introduction to Green and Sustainable Chemistry Principles	
CRIJ 1301	Introduction to Criminal Justice	
CRIJ 1306	Court Systems and Practices	
CRIJ 3362	Criminal Law	
CRIJ 4392	Criminology	
BIOL 1502	General Biology	

BIOL 2416	Genetics
BIOL 3401	Human Physiology and Anatomy
BIOL 3402	Human Physiology and Anatomy
BIOL 3403	General Microbiology
BIOL 3404	Immunology
BIOL 3307	Molecular Biology I
Total Hours	**23**

1 Students majoring in Chemistry must earn a minimum grade of "C" in all classes taken in their major disciplines

2 A six-week summer internship or externship in an approved forensic laboratory or DEA Laboratory can be used to earn credit for CHEM 4203 by submitting a detailed report of laboratory techniques acquired during the externship

Bachelor of Science in Chemistry- Traditional Degree Sequence

Core: https://catalog.pvamu.edu/universitycorecurriculum/

Freshman

Fall - Semester 1	Hours	Spring - Semester 2	Hours	Summer	Hours
CHEM 1303	3	CHEM 1304	3	American History Core	3
CHEM 1203	2	CHEM 1204	2		
Communication Core	3	Communication Core	3		
Component Area Option Two Core	3	American History Core	3		
Mathematics Core	3	MATH 2413	4		
MATH 1316					
Total	**14**	**Total**	**15**	**Total**	**3**

Total Hours: 32

Sophomore

Fall - Semester 1	Hours	Spring - Semester 2	Hours
CHEM 2203	2	CHEM 2204	2
CHEM 2303	3	CHEM 2304	3
Government/Political Science Core	3	Government/Political Science Core	3
POSC 2305		POSC 2306	
BIOL 1501	5	Language, Philosophy, and Culture Core	3
CHEM 2201	2	MATH 2414	4
CHEM 2211	2		
Total	**17**	**Total**	**15**

Total Hours: 32

Junior

Fall - Semester 1	Hours	Spring - Semester 2	Hours
PHYS 1101	1	Component Area Option One Core	3
Life and Physical Sciences Core	3	Life and Physical Sciences Core	3
PHYS 2325		PHYS 2326	
CHEM 3341	3	PHYS 1102	1
CHEM 3242	2	CHEM 4100	1
Creative Arts Core	3	CHEM 3342	3
CHEM 4105	1	CHEM 3243	2
Restricted Elective	1	Social and Behavioral Sciences Core	3
Total	**14**	**Total**	**16**

Total Hours: 30

Senior

Fall - Semester 1	Hours	Spring - Semester 2	Hours
CHEM 4303	3	CHEM 4306	3
MATH 3401	4	CHEM 4305	3
Restricted Elective	4	CHEM 4205	2
Foreign Language I	3	CHEM 4106	1
		Foreign Language II	3
Total	**14**	**Total**	**12**

Total Hours: 26

Name	Unit
Total Semester Credit Hours: 120	

BS Chemistry-Biomedical Science

Core: https://catalog.pvamu.edu/universitycorecurriculum/

Freshman

Fall - Semester 1	Hours	Spring - Semester 2	Hours	Summer	Hours
CHEM 1303	3	CHEM 1304	3	American History Core	3
CHEM 1203	2	CHEM 1204	2		
Communication Core	3	Communication Core	3		
Component Area Option One Core	3	American History Core	3		
Mathematics Core	3	MATH 2413	4		
MATH 1316					
Total	**14**	**Total**	**15**	**Total**	**3**

Total Hours: 32

Sophomore

Fall - Semester 1	Hours	Spring - Semester 2	Hours
CHEM 2203	2	CHEM 2204	2
CHEM 2303	3	CHEM 2304	3
Government/Political Science Core	3	Government/Political Science Core	3
POSC 2305		POSC 2306	
BIOL 1501	5	BIOL 1502	5
CHEM 2201	2	MATH 2414	4
CHEM 2211	2		
Total	**17**	**Total**	**17**

Total Hours: 34

Junior

Fall - Semester 1	Hours	Spring - Semester 2	Hours
PHYS 1101	1	CHEM 4105	1
Life and Physical Sciences Core	3	Life and Physical Sciences Core	3
PHYS 2325		PHYS 2326	
CHEM 3341	3	PHYS 1102	1
CHEM 3242	2	Social and Behavioral Sciences Core	3
BIOL 3401	4	MATH 1342	3
Language, Philosophy, and Culture Core	3	Creative Arts Core	3
Total	**16**	**Total**	**14**

Total Hours: 30

Senior

Fall - Semester 1	Hours	Spring - Semester 2	Hours
CHEM 4303	3	Component Area Option Two Core	3
Restricted Elective	3	CHEM 4305	3
Restricted Elective	3	Research Elective	3
Foreign Language I	3	Foreign Language II	3
Total	**12**	**Total**	**12**

Total Hours: 24

Name	Unit

Total Semester Credit Hours: 120

BS Chemistry-Forensic Science

Core: https://catalog.pvamu.edu/universitycorecurriculum/

Freshman

Fall - Semester 1	Hours	Spring - Semester 2	Hours	Summer	Hours
CHEM 1303	3	CHEM 1304	3	American History Core	3
CHEM 1203	2	CHEM 1204	2		
Communication Core	3	Communication Core	3		
Component Area Option Two Core	3	American History Core	3		
Mathematics Core	3	MATH 2413	4		
MATH 1316					
Total	**14**	**Total**	**15**	**Total**	**3**

Total Hours: 32

Sophomore

Fall - Semester 1	Hours	Spring - Semester 2	Hours
CHEM 2203	2	CHEM 2204	2
CHEM 2303	3	CHEM 2304	3
Government/Political Science Core	3	Government/Political Science Core	3
POSC 2305		POSC 2306	
BIOL 1501	5	Language, Philosophy, and Culture Core	3
CHEM 2201	2	MATH 2414	4
CHEM 2211	2		
Total	**17**	**Total**	**15**

Total Hours: 32

Junior

Fall - Semester 1	Hours	Spring - Semester 2	Hours
PHYS 2125	1	CHEM 4305	3
Life and Physical Sciences Core	3	Life and Physical Sciences	3
PHYS 2325		PHYS 2326	
CHEM 3341	3	PHYS 2126	1
CHEM 3242	2	CHEM 4100	1
Creative Arts Core	3	CHEM 4302	3
MATH 1342	3	CHEM 4203	2
Total	**15**	**Total**	**13**

Total Hours: 28

Senior			
Fall - Semester 1	**Hours**	**Spring - Semester 2**	**Hours**
CHEM 4303	3	CHEM 4306	3
CHEM 4105	1	Component Area Option Two Core	3
Social and Behavioral Sciences Core	3	Restricted Elective	3
Restricted Elective	3	Restricted Elective	3
Foreign Language I	3	Foreign Language II	3
Total	**13**	**Total**	**15**

Total Hours: 28

Name	Unit
Total Semester Credit Hours: 120	

Marketable Skills

Marketable skills, as defined by the Texas Higher Education Coordinating Board's 60x30TX Plan (http://www.60x30tx.com/), include interpersonal, cognitive, and applied skill areas, are valued by employers, and can be either primary or complementary to a major. Marketable skills are acquired by students through education, including curricular, co-curricular, and extracurricular activities.

BS Chemistry

Degree Skills

1. Conduct scientific research
2. Analyze and summarize data
3. Use of diverse instrumentation

Concentration Skills

1. Project management
2. Environmental analysis
3. Problem solving

Co-curricular and Extracurricular Skills

1. Mathematics
2. Computer programming
3. Technical writing and presentation skills