

CHEMISTRY (BA) - BIOCHEMISTRY TRACK

Program Map

Course	Title	Credit Hours
First Year		
Fall		
CHEM 1211	Principles of Chemistry I (minimum grade of C) ¹	3
CHEM 1211L	Principles of Chemistry I Lab (minimum grade of C) ¹	1
MATH 1113	Pre-Calculus (minimum grade of C)	4
ENGL 1101	English Composition I (minimum grade of C)	3
CHEM 1715	Introductory Chemistry Seminar (Area H; minimum grade of C) ²	1
POLS 1101	American Government	3
KINS 1106 or PHED 1205	Lifetime Wellness or Concepts of Fitness	2
Credit Hours		17
Spring		
CHEM 1212	Principles of Chemistry II (minimum grade of C)	3
CHEM 1212L	Principles of Chemistry II Lab (minimum grade of C)	1
MATH 1131	Calculus with Analytic Geometry I	4
ENGL 1102	English Composition II (minimum grade of C)	3
AREA E	World Culture Elective	3
Area B2	ITDS 1779 (2), LEAD 1705 (2), PERS 1506 (1; may be repeated with different topic), PERS 1507 (2)	1
Credit Hours		15
Second Year		
Fall		
CHEM 3111	Organic Chemistry I (minimum grade of C) ³	3
CHEM 3311	Organic Chemistry I Lab (minimum grade of C) ³	1
PHYS 1111	Introductory Physics I (minimum grade of C)	3
PHYS 1311	Introductory Physics I Lab (minimum grade of C)	1
BIOL 1231K	General Biology I	4
AREA C	Humanities Elective	3
Credit Hours		15
Spring		
CHEM 3112	Organic Chemistry II (minimum grade of C) ⁴	3
CHEM 3312	Organic Chemistry II Lab (minimum grade of C) ⁴	1
PHYS 1112	Introductory Physics II (minimum grade of C)	3

PHYS 1312	Introductory Physics II Lab (minimum grade of C)	1
BIOL 1232K	General Biology II	4
AREA E	Behavioral Science Elective	3
Credit Hours		15
Third Year		
Fall		
CHEM 2115	Quantitative Chemical Analysis (minimum grade of C) ⁵	3
CHEM 2315	Quantitative Chemical Analysis Lab (minimum grade of C) ⁵	1
CHEM 3141	Biochemistry I (minimum grade of C)	3
CHEM 3345	Biochemistry Lab I (minimum grade of C)	1
Area B1	COMM 1110 Public Speaking or foreign language 1001, 1002, 2001, 2002	3
AREA I	Electives	4
Credit Hours		15
Spring		
CHEM 4175	Instrumental Methods of Chemical Analysis (minimum grade of C) ⁶	3
CHEM 4375	Instrumental Methods of Chemical Analysis Lab (minimum grade of C) ⁶	1
CHEM 3142	Biochemistry II (minimum grade of C)	3
STAT 1401	Elementary Statistics	3
HIST 2111 or HIST 2112	U. S. History to 1865 or U. S. History since 1865	3
AREA G	Foreign Language (1002)	3
Credit Hours		16
Fourth Year		
Fall		
CHEM 4115	Foundations of Physical Chemistry (minimum grade of C)	3
CHEM 4315	Foundations of Physical Chemistry Lab (minimum grade of C)	1
BIOL 3215K	Cell Biology	4
AREA G	Foreign Language (2001)	3
AREA I	Electives	4
Credit Hours		15
Spring		
CHEM 3135	Inorganic Chemistry (minimum grade of C)	3
CHEM 3335	Inorganic Chemistry Lab (minimum grade of C)	1
AREA C	Fine Arts Elective	3
AREA H	Program Elective ⁷	3
AREA I	Electives	4
Select one PEDS course (https://catalog.columbusstate.edu/course-descriptions/peds/#peds)		1
EST Major Field Test		
Credit Hours		15
Total Credit Hours		123

¹ The Principles of Chemistry sequence are offered each semester and summer. These must be completed by the summer.

² Introductory Chemistry Seminar is only offered in the fall semester.

- ³ Organic Chemistry 1 and the co-requisite lab are only offered in the fall semester.
- ⁴ Organic Chemistry 2 and the co-requisite lab are only offered in the spring semester.
- ⁵ Quantitative Chemical Analysis and the co-requisite lab are only offered in the fall semester.
- ⁶ Instrumental Analysis and the co-requisite lab are only offered in the spring semester.
- ⁷ Program electives may include additional 3000 level courses in biology, physics, engineering,...etc.

Additional Notes

This program map illustrates appropriate coursework for completing a degree within four years, provided that course grades allow for earned credit. Please consult with your advisor to determine when courses can be switched out with others and taken in a different semester or sequence than illustrated since not all courses are taught every semester.

- This map is for illustrative purposes only and does not constitute a legal contract on the part of CSU since degree requirements or course offerings could change. As always, check with your advisor.
- Students must complete "Area A" (ENGL 1101 English Composition I, ENGL 1102 English Composition II, and MATH 1001 Quantitative Skills and Reasoning or higher) prior to reaching 30 hours and earn a "C" or higher in ENGL 1101 and 1102.
- As of Fall 2013, all undergraduate students are required each semester to meet the 2.0 institutional GPA standard for satisfactory academic progress.
- To graduate, a student must have 39 credits of upper-division courses (3000 level or higher). These courses may be in any discipline.
- A grade of "C" or higher is required for all chemistry courses.
- The prerequisite for Principles of Chemistry 1 (CHEM 1211 Principles of Chemistry I) and its co-requisite lab is College Algebra (MATH 1111 College Algebra) with a grade of "C" or higher or placement in MATH 1113 Pre-Calculus or higher.
- Introductory Physics 1 and 2 with the co-requisite labs are required for completion of the B.A. in chemistry.
- The prerequisite for Introductory Physics 1 (PHYS 1111 Introductory Physics I) and its lab is pre-calculus (MATH 1113 Pre-Calculus) or higher.
- The prerequisite for Organic Chemistry 2 (CHEM 3112 Organic Chemistry II) and its co-requisite lab (CHEM 3312 Organic Chemistry II Lab) are Organic Chemistry 1 (CHEM 3111 Organic Chemistry I) and its co-requisite lab (CHEM 3311) with a "C" or higher in each.
- The prerequisite for Biochemistry 1 (CHEM 3141 Biochemistry I) and its co-requisite lab (CHEM 3345 Biochemistry Lab I) are Organic Chemistry 1 (CHEM 3111 Organic Chemistry I) and its co-requisite lab (CHEM 3311 Organic Chemistry I Lab) with a "C" or higher in each.
- The prerequisite for Inorganic Chemistry (CHEM 3135 Inorganic Chemistry) and its co-requisite lab (CHEM 3335 Inorganic Chemistry Lab) are Organic Chemistry 2 (CHEM 3112 Organic Chemistry II) and its co-requisite lab (CHEM 3312 Organic Chemistry II Lab) with a "C" or higher.
- The prerequisite for Foundations of Physical Chemistry (CHEM 4115 Foundations of Physical Chemistry) and its co-requisite lab (CHEM 4315 Foundations of Physical Chemistry Lab) are Calculus 1 (MATH 1131 Calculus with Analytic Geometry I) and Introductory Physics 2 (PHYS 1112 Introductory Physics II) and its lab with a "C" or higher.
- Foundations of Physical Chemistry lecture and lab may be offered at night, i.e. 4:30 - 5:45 for the lecture and 6:00 - 8:50 for lab.
- The prerequisite for Instrumental Methods of Chemical Analysis (CHEM 4175 Instrumental Methods of Chemical Analysis) and its co-requisite lab (CHEM 4375 Instrumental Methods of Chemical Analysis Lab) are Quantitative Chemical Analysis (CHEM 2115 Quantitative Chemical Analysis) and its co-requisite lab (CHEM 2315 Quantitative Chemical Analysis Lab), Organic Chemistry 2 and its co-requisite lab (CHEM 3312 Organic Chemistry II Lab), and Calculus 1 (MATH 1131 Calculus with Analytic Geometry I). A minimum grade of "C" or higher is required to satisfy the prerequisite requirement.
- Inorganic Chemistry and its co-requisite lab (CHEM 3135 Inorganic Chemistry and CHEM 3335 Inorganic Chemistry Lab) may be offered in the fall or spring semester.
- Organic Chemistry 1 and its co-requisite lab (CHEM 3111 Organic Chemistry I and CHEM 3311 Organic Chemistry I Lab) are only offered in the fall semester and Organic Chemistry 2 with its co-requisite lab (CHEM 3112 Organic Chemistry II and CHEM 3312 Organic Chemistry II Lab) are only offered in the spring semester.
- Quantitative Analysis and its co-requisite lab (CHEM 2115 Quantitative Chemical Analysis and CHEM 2315 Quantitative Chemical Analysis Lab) are only offered in the fall semester.
- Instrumental Methods of Chemical Analysis (CHEM 4175 Instrumental Methods of Chemical Analysis) and its co-requisite lab (CHEM 4375 Instrumental Methods of Chemical Analysis Lab) are only offered in the spring semester.
- Supervised Undergraduate Research (CHEM 4899 Supervised Undergraduate Research) is offered as a 1, 2, or 3 credit hour course. The course may be repeated with a different topic up to 9 credits.
- Additional courses in astronomy, biology, chemistry, computer science, engineering, geology, or mathematics courses may be selected as program electives (area H) as approved by advisor and the department chair. At least 6 hours must be chemistry courses.