

CHEMISTRY MAJOR - ACS CERTIFIED CURRICULUM

Requirements

| Code | Title | Credits |
|---------------------------|---|-----------|
| CHEM 1171 & 1171L | General Chemistry I and General Chemistry I Lab | 4 |
| CHEM 1172 & 1172L | General Chemistry II and General Chemistry II Lab | 4 |
| CHEM 2271 & 2271L | Organic Chemistry I and Organic Chemistry I Lab | 4 |
| CHEM 2272 & 2272L | Organic Chemistry II and Organic Chemistry II Lab | 4 |
| CHEM 2282 & 2282L | Chemical Analysis and Chemical Analysis Lab | 4 |
| CHEM/BIOL 3323L | Biochemistry Lab | 1 |
| CHEM/BIOL 3324 | Biochemistry I | 3 |
| CHEM 3326 | Chemical Instrumentation | 3 |
| CHEM 3326L | Instrumental-Analytical Chemistry Lab | 3 |
| CHEM 3341 & 3341L | Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab | 5 |
| CHEM 3361 & 3361L | Physical Chemistry I and Physical Chemistry I Lab | 4 |
| CHEM 3362 & 3362L | Physical Chemistry II and Physical Chemistry II Lab | 4 |
| CHEM 4971 | Research and Seminar I | 3 |
| MATH 1141 or MATH 1171 | Calculus I for Chemistry, Engineering, and Physics Majors Calculus I | 4 |
| MATH 1142 or MATH 1172 | Calculus II for Chemistry, Engineering, and Physics Majors Calculus II | 4 |
| MATH 2243 or MATH 2273 | Calculus III for Chemistry, Engineering, and Physics Majors Multivariable Calculus | 4 |
| MATH 2251 | Ordinary Differential Equations | 3 |
| PHYS 1171 & 1171L | General Physics I and General Physics I Lab | 4 |
| PHYS 1172 & 1172L | General Physics II and General Physics II Lab | 4 |
| Total Credits | | 69 |

Notes:

- Students intending to enter primary or secondary school teaching should consult annually with the chairs of the departments of Chemistry and Education to facilitate scheduling of these curricula.
- Students intending to enter medical or dental school should consult with the Chair of the Chemistry Department and the Health Professions Advisor for appropriate modifications of this curriculum, which will include taking BIOL 1171 and BIOL 1172 in their first year

in place of PHYS 1171 and PHYS 1172, which are then taken in the sophomore year.

- Students may elect to take CHEM 3324 Biochemistry I or CHEM 3341 Advanced Inorganic Chemistry in their junior year.
- Note that the CHEM 4970-series Research and Seminar is a research elective to be coordinated with individual faculty members. It may be taken for one, two, or three credits. Students enroll in CHEM 4971 for their first semester of research, CHEM 4972 for their second semester, etc.
- Students are encouraged to participate in summer research experiences on or off campus. At the discretion of the Chemistry Department, involvement in summer research such as National Science Foundation Research Experience for Undergraduate Programs may be counted toward the research requirement for American Chemical Society certification. Each case will be evaluated individually by the department.
- All research for credit will be consistent with the American Chemical Society Committee for Professional Training guidelines.

Plan of Study

| Course | Title | Credits |
|----------------------------|--|-----------|
| First Year | | |
| Fall | | |
| CHEM 1171 | General Chemistry I | 3 |
| CHEM 1171L | General Chemistry I Lab | 1 |
| MATH 1141 or MATH 1171 | Calculus I for Chemistry, Engineering, and Physics Majors or Calculus I | 4 |
| PHYS 1171 | General Physics I | 3 |
| PHYS 1171L | General Physics I Lab | 1 |
| Core Courses | | 6 |
| Credits | | 18 |
| Spring | | |
| CHEM 1172 | General Chemistry II | 3 |
| CHEM 1172L | General Chemistry II Lab | 1 |
| MATH 1142 or MATH 1172 | Calculus II for Chemistry, Engineering, and Physics Majors or Calculus II | 4 |
| PHYS 1172 | General Physics II | 3 |
| PHYS 1172L | General Physics II Lab | 1 |
| Core Courses | | 6 |
| Credits | | 18 |
| Second Year | | |
| Fall | | |
| CHEM 2271 | Organic Chemistry I | 3 |
| CHEM 2271L | Organic Chemistry I Lab | 1 |
| MATH 2243 or MATH 2273 | Calculus III for Chemistry, Engineering, and Physics Majors or Multivariable Calculus | 4 |
| Core Courses and Electives | | 9 |
| Credits | | 17 |

Spring

| | | |
|----------------------------|--------------------------|-----------|
| CHEM 2272 | Organic Chemistry II | 3 |
| CHEM 2272L | Organic Chemistry II Lab | 1 |
| CHEM 2282 | Chemical Analysis | 3 |
| CHEM 2282L | Chemical Analysis Lab | 1 |
| Core Courses and Electives | | 9 |
| Credits | | 17 |

Third Year**Fall**

| | | |
|----------------------------|---------------------------------------|-----------|
| CHEM 3326 | Chemical Instrumentation ¹ | 3 |
| CHEM 3361 | Physical Chemistry I | 3 |
| CHEM 3361L | Physical Chemistry I Lab | 1 |
| MATH 2251 | Ordinary Differential Equations | 3 |
| Core Courses and Electives | | 6 |
| Credits | | 16 |

Spring

| | | |
|----------------------------|--|-----------|
| CHEM 3326L | Instrumental-Analytical Chemistry Lab ¹ | 3 |
| CHEM 3362 | Physical Chemistry II | 3 |
| CHEM 3362L | Physical Chemistry II Lab | 1 |
| Core Courses and Electives | | 9 |
| Credits | | 16 |

Fourth Year**Fall**

| | | |
|----------------------------|---|-----------|
| CHEM 3341 | Advanced Inorganic Chemistry ¹ | 3 |
| CHEM 3341L | Advanced Inorganic Chemistry Lab ¹ | 2 |
| CHEM 4971 | Research and Seminar I ² | 3 |
| Core Courses and Electives | | 9 |
| Credits | | 17 |

Spring

| | | |
|----------------------------|-------------------------------|------------|
| CHEM 3323L | Biochemistry Lab ¹ | 1 |
| or BIOL 3323L | or Biochemistry Lab | |
| CHEM 3324 | Biochemistry I ¹ | 3 |
| or BIOL 3324 | or Biochemistry I | |
| Core Courses and Electives | | 9 |
| Credits | | 13 |
| Total Credits | | 132 |

¹ May be taken either third or fourth year.² 1-3 credits per semester. May be taken in fall, spring, or both semesters of the fourth year.