

Bachelor of Science with a Major in Chemistry

Requirements for the Bachelor of Science Degree with a Major in Chemistry

The chemistry department requires that the prerequisites for a number of chemistry courses be completed with a grade of "C" or better. Majors in the department should consult an advisor at frequent intervals to be certain that prerequisites are met at the appropriate time and with a suitable grade.

| Code | Title | Hours |
|--|---|------------|
| Core Curriculum | | 60 |
| Core Area A, B, C, D.2.a, and E (See VSU Core Curriculum) ¹ | | 42 |
| Core Area F ² | | |
| MATH 2261 | Analytic Geometry and Calculus I (Carry-over from Area D.2.a) | 1 |
| MATH 2262 | Analytic Geometry and Calculus II | 4 |
| CHEM 1211 & 1211L | Principles of Chemistry I and Principles of Chemistry Laboratory I (unless taken in Area D.2.a) | 0-4 |
| CHEM 1212 & 1212L | Principles of Chemistry II and Principles of Chemistry Laboratory II (unless taken in Area D.2.a) | 0-4 |
| CHEM 2310 | Quantitative Analysis | 4 |
| PHYS 2211K or PHYS 1111K | Principles of Physics I (unless taken in Area D.2.a) ³ Introductory Physics I | 0-4 |
| PHYS 2212K or PHYS 1112K | Principles of Physics II (unless taken in Area D.2.a) ³ Introductory Physics II | 0-4 |
| Senior College Curriculum | | 60 |
| Select one of the following options: | | |
| American Chemical Society Certified Degree | | |
| American Chemical Society Certified Degree Biochemistry Option | | |
| Pre-professional Option | | |
| Total hours required for the degree | | 120 |

¹ Chemistry majors must take MATH 1113 in Area A and MATH 2261 in Area D.2.a. One hour of MATH 2261 will carry over to Area F. In Area D.2.a, chemistry majors may select eight hours from CHEM 1211/CHEM 1211L, CHEM 1212/CHEM 1212L, PHYS 2211K, PHYS 2212K, or BIOL 1107 and BIOL 1107L.

² Hours in excess of 18 will carry over into the Senior College Curriculum.

³ Students in the pre-professional option, the American Chemical Society (ACS) Certified Degree, and the American Chemical Society (ACS) Certified Degree Biochemistry Option may substitute PHYS 1111K for PHYS 2211K and PHYS 1112K for PHYS 2212K; however, students in the ACS Certified Degree and the ACS Certified Degree Biochemistry Option are strongly encouraged to enroll in PHYS 2211K and PHYS 2212K.

Chemistry Major: American Chemical Society Certified Degree

| Code | Title | Hours |
|--|--|-------|
| Of the 60 semester hours, 39 must be in courses numbered 3000 or above | | |
| CHEM 1210 | First Year Seminar | 1 |
| CHEM 2210 | Sophomore Seminar | 1 |
| CHEM 3401 | Organic Chemistry I | 4 |
| CHEM 3402 | Organic Chemistry II | 4 |
| CHEM 3510 | Inorganic Chemistry | 4 |
| CHEM 3601 & 3601L | Biochemistry I and Laboratory Techniques in Biochemistry | 5 |
| CHEM 3801 | Physical Chemistry I | 4 |
| CHEM 3802 | Physical Chemistry II | 4 |
| CHEM 4210 | Seminar | 1 |
| CHEM 4310 | Instrumental Analysis | 4 |
| Advanced courses in Chemistry | | 6 |

| | |
|--------------------------------------|-------|
| Modern Foreign Language ⁴ | 3-6 |
| Electives ⁵ | 16-19 |

⁴ If three hours of language are taken in Area C of the core, only three will be required in this portion of the major.

⁵ Includes hours which carry over from Area F.

Chemistry Major: American Chemical Society Certified Degree

Biochemistry Option

| Code | Title | Hours |
|--|---|-------|
| Of the 60 semester hours, 39 must be in courses numbered 3000 or above | | |
| CHEM 1210 | First Year Seminar | 1 |
| CHEM 2210 | Sophomore Seminar | 1 |
| BIOL 1107 & 1107L | Principles of Biology I and Principles of Biology Laboratory I | 4 |
| BIOL 3100 | Microbiology | 4 |
| CHEM 3401 | Organic Chemistry I | 4 |
| CHEM 3402 | Organic Chemistry II | 4 |
| CHEM 3510 | Inorganic Chemistry | 4 |
| CHEM 3601 & 3601L | Biochemistry I and Laboratory Techniques in Biochemistry | 5 |
| CHEM 3602 | Biochemistry II | 3 |
| CHEM 3801 | Physical Chemistry I | 4 |
| CHEM 3802 | Physical Chemistry II | 4 |
| CHEM 4210 | Seminar | 1 |
| CHEM 4310 | Instrumental Analysis | 4 |
| Modern Foreign Language ⁷ | | 3-6 |
| Electives ^{8,9} | | 16-19 |

⁶ Unless taken in Area D.2.a

⁷ If three hours of language are taken in Area C of the core, only three will be required in this portion of the major.

⁸ Includes hours which carry over from Area F.

⁹ May include CHEM 4910, but must be a biochemistry topic.

Chemistry Major: Pre-Professional Option

| Code | Title | Hours |
|--|---|-------|
| Of the 60 semester hours, 39 must be in courses numbered 3000 or above. | | |
| CHEM 1210 | First Year Seminar | 1 |
| CHEM 2210 | Sophomore Seminar | 1 |
| BIOL 1107 & 1107L | Principles of Biology I and Principles of Biology Laboratory I | 4 |
| Science elective, 2000 or above | | 4 |
| CHEM 3401 | Organic Chemistry I | 4 |
| CHEM 3402 | Organic Chemistry II | 4 |
| CHEM 3510 | Inorganic Chemistry | 4 |
| CHEM 3601 & 3601L | Biochemistry I and Laboratory Techniques in Biochemistry | 5 |
| CHEM 3801 or CHEM 3802 | Physical Chemistry I Physical Chemistry II | 4 |
| CHEM 4210 | Seminar | 1 |
| Upper Division mathematics, computer science, or science electives ¹⁰ | | 7-8 |
| Modern Foreign Language ¹¹ | | 3-6 |
| Electives ¹² | | 14-18 |

- 10 Students who wish to emphasize biochemistry shall take CHEM 3602 & CHEM 3802.
- 11 If three hours of language are taken in Area C of the core, only three will be required in this portion of the major.
- 12 Includes hours that carry over from Area F.

VSU/PCOM School of Pharmacy 3 + 4 Program

Under an agreement between VSU and the Philadelphia College of Osteopathic Medicine (PCOM) School of Pharmacy, students may earn a BS in Chemistry and a PharmD upon completion of this program. Students begin with acceptance to PCOM's Early Assurance Program. The 3 + 4 program consists of three years of undergraduate coursework at VSU under a modification of the Chemistry Pre-Professional option. After acceptance and matriculation to PCOM's PharmD program, approved courses from the first two years of study at PCOM are transferred to VSU to satisfy upper division requirements to complete the BS in Chemistry. Students interested in this program should contact PCOM about the Early Assurance Program and the Chemistry department at VSU.

The student will complete Core Areas A-F and the Pre-Professional Option curriculum with the following modifications:

1. MATH 1401 and CHEM 1210 will satisfy Core Area B.
2. COMM 1100 must be taken as a Core Area C elective.
3. ECON 2105 or ECON 2106 must be taken as a Core Area E elective.
4. BIOL 1108 and BIOL 1108L will satisfy the Science elective, 2000-level or higher, requirement.
5. The Modern Foreign Language requirement is waived (9 credit hours).
6. Additional required courses are BIOL 2651, BIOL 2652, and CHEM 4210.
7. The requirement for 30 of the last 40 hours to be taken in residence at VSU is waived.
8. After acceptance and matriculation to PCOM School of Pharmacy, a minimum of 22 credit hours from PCOM School of Pharmacy courses that are approved by the Chemistry department will be transferred to VSU as upper division hours to satisfy all remaining requirements for the Chemistry major: Pre-Professional Option.