

CHEMISTRY MAJOR, BS

Campus: NYC, Westchester

This major prepares students for graduate school, medical school, or employment in the chemical or pharmaceutical industry and is approved by the American Chemical Society. It includes required CHE courses and a group of required Math and Science courses. Students interested in Forensic Science are urged to view the requirements of that major's BS program.

Major Completion Summary

| Requirement | Credits |
|------------------------------|-----------------------------|
| University Core Requirements | 44-55 |
| Major Requirements | 65 |
| Open Electives | 1-9 |
| Total Credits | 120 (see footnote 4) |

University Core Requirements (44-55 Credits)

See complete University Core (<https://catalog.pace.edu/undergraduate/university-core-curriculum/>) requirements.

Includes many of the major's required Math and Science courses if taken to satisfy Core Foundation and Area requirements.

| Code | Title | Credits |
|---|--|--------------|
| University Core | | |
| Complete University Core Requirements ¹ | | 44-55 |
| MAT 131 | Calculus I (Foundation) | |
| BIO 101 | General Biology I (Foundation) ² | |
| PHY 112 | General Physics II (AOK V) ² | |
| ENG 110 | Composition (can test out) | |
| ENG 120 | Critical Writing | |
| COM 200 | Public Speaking | |
| CIS 101 | Introduction to Computing (or another course in this category) | |
| Two 2nd Language courses (can test out) | | |
| Other AOK courses (AOK II-IV 2 each & CE & one additional AOK II - V) | | |
| Total Credits | | 44-55 |

Major Requirements (65 Credits)

| Code | Title | Credits |
|---|---|---------|
| Required Chemistry Courses | | |
| CHE 111 | General Chemistry I ¹ | 4 |
| CHE 112 | General Chemistry II ¹ | 4 |
| CHE 221 | Analytical Methods and Techniques ^{1,2} | 3 |
| CHE 223 | Organic Chemistry I ^{1,2} | 4 |
| CHE 224 | Organic Chemistry II ^{1,2} | 4 |
| CHE 301 | Physical Chemistry I: Quantum Mechanics and Spectroscopy ¹ | 4 |
| CHE 302 | Physical Chemistry II: Thermodynamics, Molecular Interactions and Kinetics ¹ | 4 |
| CHE 310 | Green Chemistry ² | 3 |
| CHE 326 | Biochemistry ¹ | 4 |
| CHE 330 | Advanced Inorganic Chemistry ¹ | 4 |
| CHE 331 | Instrumental Analysis ¹ | 4 |
| CHE 392 | Chemistry Seminar I | 1 |
| CHE 480 | Research in Chemistry | 3 |
| Campus Specific Chemistry Course | | |
| Complete campus specific course. | | 7 |
| <i>NYC Students</i> | | |

| | | |
|---------------------|---|--|
| CHE 200 | Mathematical Methods for Physical Chemistry | |
| CHE 333 | Advanced Organic Chemistry | |
| <i>PLV Students</i> | | |
| MAT 253 | Differential Equations | |
| CHE 370 | Advanced Biophysical Chemistry: Membrane Transport and Ionic Channels | |

Required Math and Science Courses

| | | |
|----------------------|--------------------|-----------|
| BIO 102 | General Biology II | 4 |
| MAT 132 | Calculus II | 4 |
| PHY 111 | General Physics I | 4 |
| Total Credits | | 65 |

Open Electives (1-9 Credits)

| Code | Title | Credits |
|---------------------------------|--|------------|
| Open Electives | | |
| Select 1-9 credits ¹ | | 1-9 |
| UNV 101 | First-Year Seminar: Introduction to University Community | |
| Total Credits | | 1-9 |

¹ Includes various Math and Science courses not taken for University Core Credit. Includes many of the major's required Math and Science courses if taken to satisfy Core Foundation and Area requirements.

² Take credit-bear lecture and 0-credit lab in the same semester.

³ Reduced credits (effective from Spring 2025) shown.

⁴ Students who do not test out of certain Core requirements will be required to take more than 120 credits to earn the BS degree. Please consult with your academic advisor and the department for more information.

General Track

In addition to the courses listed below, students are required to complete two courses with the Anti-Racism Education attribute attached. These courses may be taken during any semester of their education. See advisor for more information.

| Course | Title | Credits |
|--|---|-----------|
| First Year | | |
| Fall | | |
| ENG 110 | Composition | 3 |
| BIO 101 | General Biology I ¹ | 4 |
| CHE 111 | General Chemistry I ¹ | 4 |
| MAT 131 | Calculus I | 4 |
| UNV 101 | First-Year Seminar: Introduction to University Community (STEM Major section) | 1 |
| | Credits | 16 |
| Spring | | |
| ENG 120 | Critical Writing | 4 |
| BIO 102 | General Biology II ¹ | 4 |
| CHE 112 | General Chemistry II ¹ | 4 |
| MAT 132 | Calculus II | 4 |
| | Credits | 16 |
| Second Year | | |
| Fall | | |
| CHE 223 | Organic Chemistry I ^{1,2} | 4 |
| PHY 111 | General Physics I ¹ | 4 |
| First Second Language course. See Advisor for guidelines | | 3 |
| CIS 101 | Introduction to Computing ¹ | 3 |
| | Credits | 14 |
| Spring | | |
| CHE 224 | Organic Chemistry II ^{1,2} | 4 |

| | | |
|---|--|----------------|
| PHY 112 | General Physics II (Analysis of Human, Social, and Natural Phenomena (AOK5)) ¹ | 4 |
| CHE 200 or MAT 253 | Mathematical Methods for Physical Chemistry (in NYC. Take MAT 253 in PLV in) or Differential Equations | 4 |
| Second Language Course, if applicable | | 3 |
| Credits | | 15 |
| Third Year | | |
| Fall | | |
| CHE 221 | Analytical Methods and Techniques ^{1,2} | 3 |
| CHE 301 | Physical Chemistry I: Quantum Mechanics and Spectroscopy ¹ | 4 |
| COM 200 | Public Speaking | 3 |
| ENG 201 | Writing in the Disciplines | 3 |
| Credits | | 13 |
| Spring | | |
| CHE 302 | Physical Chemistry II: Thermodynamics, Molecular Interactions and Kinetics ¹ | 4 |
| CHE 331 | Instrumental Analysis ¹ | 4 |
| CHE 326 | Biochemistry (Writing Enhanced (WE) course) ¹ | 4 |
| AOK 1 (CE) and AOK II - V ³ | | 3 |
| Credits | | 15 |
| Fourth Year | | |
| Fall | | |
| CHE 310 | Green Chemistry ¹ | 3 |
| CHE 480 | Research in Chemistry | 3 |
| AOK II to IV (LC or INT) (take two linked 3-credit LCs or one 6-credit INT) | | 3 |
| AOK II to IV (LC or INT) | | 3 |
| AOK V (MAT 141 recommended) | | 3-4 |
| Credits | | 15-16 |
| Spring | | |
| CHE 330 | Advanced Inorganic Chemistry ¹ | 4 |
| CHE 333 | Advanced Organic Chemistry (in NYC. Take CHE 370 Advanced Biophysical Chemistry in PLV.) | 3 |
| CHE 392 | Chemistry Seminar I | 1 |
| AOK II to V (take a remaining AOK requirement) | | 3 |
| Open Elective | | 3 |
| AOK II - IV | | 3 |
| Credits | | 17 |
| Total Credits | | 121-122 |

¹ Take credit-bearing lecture and lab in the same semester

² Reduced credits (effective from Spring 2025) shown

³ Must take a CE course. Many AOK II - IV courses also count as CE.