

Chemistry Major at a Glance

Required Chemistry Courses (37 credits)

A. General Chemistry

Chem 109 Advanced General Chemistry (5 credits)
OR Chem 109H Advanced General Chemistry Honors (5 credits)
OR Chem 115 Chemical Principles I (5 credits) (Enrollment by invitation only.)
OR Chem 104 (5 credits) (Chem 103 is a prerequisite.)
(Chem 109 or 115 is, but Chem 103/104 also fulfills this requirement.)

B. Analytical Chemistry

Chem 329¹ Fundamentals of Analytical Science (4 credits)
OR Chem 116 Chemical Principles II (5 credits)
(only open to students who took Chem 115)

C. Inorganic Chemistry

Chem 311² Chemistry Across the Periodic Table (4 credits)

D. Organic Chemistry

Chem 343 Introductory Organic Chemistry (3 credits)
Chem 344³ Introductory Organic Chemistry Laboratory (2 credits)
Chem 345 Intermediate Organic Chemistry (3 credits)

E. Physical Chemistry

Chem 561 Physical Chemistry I (3 credits) OR Chem 565 Biophysical Chemistry (4 credits)
[CBE 310 Chemical Process Thermodynamics (3 credits) may be taken in place of Chem 561]
Chem 562 Physical Chemistry II (3 credits)
Chem 563⁴ Physical Chemistry Laboratory I (1 credit)
Chem 564 Physical Chemistry Laboratory II (1 credit)

F. Additional course work (5 credits)

Choose from any 500-600 level courses in chemistry or biochemistry. Some options include Chem 505 Industrial Chemistry, Chem 509 Senior Seminar, Chem 511 Inorganic Chemistry, Chem 524 Chemical Instrumentation (3 cr; 2 cr count for additional coursework), Chem 547 Advanced Organic Chemistry, Biochem 501 Introduction to Biochemistry, and Biochem 507 & 508 General Biochemistry I & II.

G. Additional laboratory work (3 credits)

Choose from the following Chemistry labs: Chem 346 Intermediate Organic Laboratory, Chem 524 Chemical Instrumentation (3 credits, 1 credit counts for additional lab work), BIOMOLCHEM 504, Chem 691 & 692 Senior Thesis, and/or Chem 699 Directed Study.

For a complete list of courses that can count towards the additional course work and the additional laboratory work requirements, see the "Electives for Chemistry Majors" link on this page:

<https://www.chem.wisc.edu/content/majoring-chemistry>

Math and Physics Requirements

Math 221 Calculus I (5 credits) and Math 222 Calculus II (4 credits) are required. Math 234 Calculus Functions of Several Variables (4 credits) and Math 320 Linear Algebra and Differential Equations (3 credits) are highly recommended.

A year of calculus-based physics: Physics 207-208 General Physics I & II (5 credits each) are recommended; Physics 201-202 General Physics I & II (5 credits each) are also accepted. The physics courses include a three-hour laboratory.

See more at: <http://chem.wisc.edu/content/degree-requirements>

¹ Students who declare the Chemistry major after taking Chem 327 may count Chem 327 towards the major instead of Chem 329.

² Chem 511 cannot be substituted for Chem 311.

³ Chem 344 should be taken concurrently with or after Chem 345.

⁴ It is recommended that Chem 563 be taken concurrently with Chem 562 and that Chem 564 be taken after completion of Chem 562. Especially strong students needing to complete physical chemistry in two semesters may take Chem 563 concurrently with Chem 561 (or 565) and Chem 564 concurrently with Chem 562.