METROPOLITAN STATE UNIVERSITY OF DENVER
Department of Chemistry and Biochemistry

Requirements for B.S. in Chemistry

Major Requirements

120 credit hours total (of which 33 are general studies degree requirements). A grade of "C-" or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.

- 40 credits required major courses
- 22 credits required ancillary courses
- 10 credits upper division chemistry electives
- 3-4 credits senior experience
- 8-21 credits other electives

Your first year

College algebra is a prerequisite for beginning the Chemistry sequence, so in your first year you need to do one of the following:

- Get an Advanced Algebra and Function (AAF) score of at least 280 on the Accuplacer exam

or

- Complete college algebra (fulfills general studies requirement)
    - Note: calculus is required later, so you must take algebra with that path in mind! Talk to an advisor about which algebra is right for you!

Also recommended for your first year of studies are written and oral communication classes (fulfills general studies requirements).

The Major Course sequence

Main Sequence

Semester 1	❑ CHE 1800 – General Chemistry I (4 credits) ❑ CHE 1801 – General Chemistry I Lab (1 credit) Suggested: Precalculus (MTH 1400) or Trigonometry (MTH 1120)
Semester 2	❑ CHE 1810 – General Chemistry II (4 credits) ❑ CHE 1811 – General Chemistry II Lab (1 credit) Suggested: Physics I (PHY 2010 or PHY 2311) and lab (PHY 2030 or PHY 2321)
Semester 3	❑ CHE 3000 – Analytical Chemistry (3 credits) ❑ CHE 3010 – Analytical Chemistry Lab (2 credits) Suggested: Calculus I (MTH 1410)

Semester 4	❑ CHE 3100 – Organic Chemistry I (4 credits) ❑ CHE 3120 – Organic Chemistry I Lab (1 credit) Suggested: Calculus II (MTH 2410) Suggested: Physics II (PHY 2020 or PHY 2331) and lab (PHY 2040 or PHY 2341)
Semester 5	❑ CHE 3110 – Organic Chemistry II (3 credits) ❑ CHE 3130 – Organic Chemistry II Lab (2 credits) Suggested: Calculus III (MTH 2420)
Semester 6+	❑ 5 credits of required upper division chemistry ❑ 3 or 4 credits of chemistry electives

Required Upper Division – Check with an advisor, not offered every semester

- ❑ CHE 3300 - Inorganic Chemistry (3 credits)
- ❑ CHE 4450 - Physical Chemistry: Quantum Mechanics and Spectroscopy (4 credits)
- ❑ CHE 4460 - Physical Chemistry: Thermodynamics and Kinetics (4 credits)
- ❑ CHE 4480 - Physical Chemistry Laboratory: Quantum and Spectroscopy (2 credits)
- ❑ CHE 4490 - Physical Chemistry Laboratory: Thermodynamics and Kinetics (2 credits)

Chemistry Electives – 10 credits required. Check with an advisor, not all courses are offered every semester.

- CHE 3700 - Forensic Chemistry (4 credits)
- CHE 3710 - Forensic Biochemistry (4 credits)
- CHE 4010 - Advanced Organic Chemistry (3 credits)
- CHE 4100 - Instrumental Analysis (3 credits)
- CHE 4110 - Instrumental Analysis Laboratory (2 credits)
- CHE 4130 - Quality in the Chemical Industry (3 credits)
- CHE 4160 - QA/QC Methods Laboratory (1 credit)
- CHE 4300 - Advanced Inorganic Chemistry (4 credits)
- CHE 4310 - Biochemistry I (4 credits)
- CHE 4320 - Biochemistry II (4 credits)
- CHE 4350 - Biochemistry Laboratory (2 credits)
- CHE 4370 - Undergraduate Research in Chemistry (1-2 credits)

Senior Experience – choose one

CHE 4300 - Advanced Inorganic Chemistry (4 credits)

or

CHE 4950 - Senior Experience in Chemistry (3 credits)

or

CHE 4960 - Senior Experience in Biochemistry (3 credits)

Required Ancillary Courses

Math

- ❑ MTH 1410 – Calculus I (4 cr. – fulfills general studies requirement)
- ❑ MTH 2410 – Calculus II (4 cr.)
- ❑ MTH 2420 – Calculus III (4 cr.)

Physics – choose one lecture/lab sequence:

- ❑ PHY 2010 - College Physics I (4 cr. – fulfills general studies requirement)
- ❑ PHY 2030 - College Physics I Laboratory (1 cr.)
- ❑ PHY 2020 - College Physics II (4 cr.)
- ❑ PHY 2040 - College Physics II Laboratory (1 cr.)

OR

- ❑ PHY 2311 - General Physics I (4 cr. – fulfills general studies requirement)
- ❑ PHY 2321 - General Physics I Laboratory (1 cr.)
- ❑ PHY 2331 - General Physics II (4 cr.)
- ❑ PHY 2341 - General Physics II Laboratory (1 cr.)

Are you ready for graduation?

- ❑ Completed ancillary courses? (3 math, 4 physics)
- ❑ Completed all 15 required major courses?
- ❑ 10 credits of chemistry electives?
- ❑ Senior Experience?
- ❑ General degree requirements met?
- ❑ 120 credit hours total?
- ❑ Final advising appointment?
- ❑ Submitted application for graduation?