4-Year Plan

BSc. Chemistry with Concentration in Biochemistry

- Each semester a minimum of 12 credit hours are required to be a full-time student. Please select University Core/Electives courses from here.
- For a list of chemistry research courses, click here. Be mindful that most research advisors require more than one semester of commitment.
- For a list of electives offered by semester, click here.
- If you are interested in ACS certification, please click here to see the required courses.
- For a **Chemistry Minor**, please click here

Freshman Year

Freshman Fall Semester

- CHEM 1211K Principles of Chemistry I (4 credits)
- Math 1113 Pre-Calculus (3 credits)

Chem & Math Total: 7 credits

Freshman Spring Semester

- CHEM1212K Principles of Chemistry II (4 credits)
- Math 2211 Calculus of One Variable I (4 credits) or Math 2201 Calculus for the Life Science I (4 credits)
- BIOL 2107 Principles of Biology I (4 credits)

Chem, Math & Biol Total: 12 credits

Sophomore Year

Sophomore Fall Semester

- CHEM 2400 Organic Chemistry I (3 credits)
- CHEM 2100 Intermediate Organic Chemistry Lab I (2 credits)

- Math 2212 Calculus of One Variable II (4 credits) or Math 2202 Calculus for the Life Science II (4 credits)
- BIOL 2108 Principles of Biology II (4 credits)

Chem, Math & Biol Total: 13 credits

Sophomore Spring Semester

- CHEM 2410 Organic Chemistry II (3 credits)
- CHEM 3110 Intermediate Organic Chemistry Lab II (2 credits)
- CHEM 3400 Structure and Reactivity of Biomolecules (3 credits)
- PHYS 2211 Principles of Physics I (4 credits)

Chem, Phys & Biol Total: 12 credits

Junior Year

Junior Fall Semester

- CHEM 4600 Biochemistry I (5 credits)
- PHYS 2212 Principles of Physics II (4 credits)
- BIOL 3800 Molecular Cell Biology (3 credits)

Chem, Phys & Biol Total: 12 credits

Junior Spring Semester

- BIOL 3810 Molecular Cell Biology Lab-CTW (3 credits)
- CHEM 4150 Biophysical Chemistry (3 credits) or CHEM 4110 Thermodynamics & Kinetics (3 credits)
- BIOL 3880 Microbiology (3 credits) or BIOL 3900 Genetics (3 credits)

Chem & Biol Total: 9 credits

Senior Year

Senior Fall Semester

- CHEM 4000 Fundamentals of Chemical Analysis-CTW (3 credits)

Chem Total: 3 credits

Senior Spring Semester

- CHEM 4010 Instrumental Analysis (3 credits)
- BIOL 3890 Microbiology Lab (3 credits) or BIOL 3910 Genetics Lab (3 credits)

Chem & Biol Total: 6 credits

Chemistry Research Courses

All research courses are offered throughout the semester. Students are encouraged to look at the chemistry research brochure at https://chemistry.gsu.edu/research/ and see all research opportunities that faculty have; then directly contact potential research advisors for CHEM 2950, 3950, 4950, 4160, 4170 , 4870 & 4880.

Once the faculty advisor agrees to mentor the student, the faculty advisor will request for the course to be added to GoSolar/PAWS. The student will then email the Director of Undergraduate Studies to receive an override to register for the course.

Electives Offered by Semester

Fall Semester

- CHEM 4050 Introduction to Fourier-Transform NMR Spectroscopy (2 credits)
- CHEM 4120 Quantum Chemistry (3 credits)-if CHEM 4110 was taken
- CHEM 4190 Instrumental Methods III: Spectroscopy (3 credits)
- CHEM 4221* Inorganic Chemistry II (3 credits)
- CHEM 4330 Advanced Synthesis (3 credits)
- CHEM 4400 Mechanistic Organic Chemistry (3 credits)
- CHEM 4410 Bioorganic Chemistry (3 credits)
- CHEM 4490 Special Topics in Organic Chemistry (3 credits)
- CHEM 4630 Enzymology (3 credits)
- CHEM 4850 Bioanalytical Chemistry (3 credits)
- CHEM 4871 Electrochemical Methods (3 credits)

Summer Semester

Spring Semester

- CHEM 3200 College to Career and Research (3 credits)
- CHEM 4050 Introduction to Fourier-Transform NMR Spectroscopy (2 credits)
- CHEM 4120 Quantum Chemistry (3 credits)-if CHEM 4110 was taken
- CHEM 4190 Instrumental Methods III: Spectroscopy (3 credits)
- CHEM 4210 Inorganic Chemistry I (3 credits)
- CHEM 4221* Inorganic Chemistry II (3 credits)
- CHEM 4610 Biochemistry II (3 credits)
- CHEM 4230 Metals in Biology and Medicine (3 credits)
- CHEM 4240 Chemical Biology (3 credits)
- CHEM 4420 Drug Discovery: Theory and Practice (3 credits)
- CHEM 4430 Advanced Synthesis and Mechanism in Organic Chemistry (3 credits)
- CHEM 4450 Molecular Modeling Methods (3 credits)

*Check the schedule each semester to see if the course is being offered

Courses Required for ACS Certification

- CHEM 4160 Chemistry Laboratory IVA-CTW (3 credits)
- CHEM 4170 Chemistry Laboratory IVA-CTW (4 credits)
- CHEM 4210 Inorganic Chemistry I (3 credits)
- CHEM 4330 Advanced Synthesis (3 credits)
- CHEM 4600 Biochemistry I (5 credits)