

# 4-Year Plan

## BSc. In Chemistry

- 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

- **CHEM 1212K 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)

Chem & Math Total: 8 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)
- **PHYS 2211 Principles of Physics I** (4 credits)

Chem, Math & Phys Total: 13 credits

## **Sophomore Spring Semester**

- CHEM 2410 Organic Chemistry I (3 credits)
- CHEM 3110 Intermediate Organic Chemistry Lab II (2 credits)
- PHYS 2212 Principles of Physics II (4 credits)

Chem & Phys Total: 9 credits

## **Junior Year**

### **Junior Fall Semester**

- CHEM 3400 Structure and Reactivity of Biomolecules (3 credits)
- CHEM 4000 Fundamentals of Chemical Analysis-CTW (3 credits)
- CHEM 4110 Thermodynamics & Kinetics (3 credits)

Chem Total: 9 credits

### **Junior Spring Semester**

- CHEM 4010 Instrumental Analysis (3 credits)
- CHEM 4120 Quantum Chemistry (3 credits)

Chem Total: 6 credits

## **Senior Year**

### **Senior Fall Semester**

- CHEM 4190 Instrumental Methods III: Spectroscopy (3 credits)

Chem Total: 3 credits

### **Senior Spring Semester**

- Complete outstanding requirements for your major/degree

## 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 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 4600 Biochemistry I (5 credits)
- CHEM 4630 Enzymology (3 credits)
- CHEM 4850 Bioanalytical Chemistry (3 credits)
- CHEM 4871 Electrochemical Methods (3 credits)

### Summer Semester

- CHEM 4600 Biochemistry I (5 credits)

### Spring Semester

- CHEM 3200 College to Career and Research (3 credits)
- CHEM 4050 Introduction to Fourier-Transform NMR Spectroscopy (2 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)
- CHEM 4600 Biochemistry I (5 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)