

## BACHELOR OF SCIENCE IN CHEMISTRY MAJOR PLANNER

**Requirements for chemistry majors include the course requirements of the Chemistry Department and College Residency Requirements. Requirements for the BS degrees are presented. This form is yours to keep. Please bring it with you when you come to see the departmental advisor. You should meet with the advisor at least once every other semester to review your progress.**

**All** of the following courses are required – {F} = Fall offerings; {S} = Spring offerings; \* = Writing Intensive

Chem 1100 – General Chemistry I (or Chem 1050 & Chem 2050 – General Chemistry IA&IB)  
Chem 2100 – General Chemistry II  
Chem 2110 – Principles of Chemical Reactivity  
Chem 3415W\* – Writing Intensive Analytical Chemistry  
Chem 3511/3512 – Organic Chemistry I Lecture/Lab  
Chem 3521/3522 – Organic Chemistry II Lecture/Lab  
Chem 3900 (S) – Professional Readiness for Chemists  
Chem 4610{F} – Physical Chemistry I  
Chem 4620 {S} – Physical Chemistry II  
Phys 1150 – General Physics I (or Phys 1100 – General Physics I)  
Phys 2150 – General Physics II (or Phys 2100 – General Physics II)  
Math 1201 – Calculus I  
Math 1206 – Calculus II  
Math 2201 – Multivariable Calculus

**9 Credits** from the following list of Advanced Courses are required – {F} = Fall offerings; {S} = Spring offerings

Chem 2700 {F} – Introduction to Inorganic Chemistry (3 credits)  
Chem 3420 {F} – Instrumental Analysis (5 credits)  
Chem 4530 {S} – Advanced Organic Lab Techniques (5 credits)  
Chem 4550 {S} – Advanced Organic Chemistry (3 credits)  
Chem 4570 {F} – Biochemistry (5 credits)  
Chem 4571 – Biochemistry Lectures (3 credits)  
Chem 4572 {F} – Biochemistry Laboratory (2 credit)  
Chem 4581 {S} – Biochemistry II Lectures (3 credits)  
Chem 4640 {F} – Quantum Chemistry (3 credits)  
Chem 4760 {S} – Inorganic Chemistry (5 credits) (or Chem 4761 {S} – Inorganic Chemistry (3 credits))  
Chem 4780 {F} – Environmental Chemistry (3 credits)

### Elective Courses

Chem 5010, 5020, 5030 – Independent Research  
Chem 5110, 5120, 5130 – Independent Research (Honors)  
Chem 5210, 5220, 5230 – Seminar  
Chem 5400 – Industrial Internship in Chemistry

### Writing Intensive Requirement

Chemistry majors must take a writing intensive course (denoted by \*) in an area relevant to the major

### Residency Requirement

24 credits in advanced Chemistry course must be earned with a grade of C- or better at Brooklyn College

**PLANNED SCHEDULE FOR CHEMISTRY COURSES**

FALL

SPRING

FALL

SPRING

FALL

SPRING

FALL

SPRING

FALL

SPRING

FALL

SPRING

FALL

SPRING

**Chemistry Advisement:** Contact the Department of Chemistry to get the name of the current undergraduate advisor, and send an e-mail to the advisor to schedule an appointment. You should meet individually with the advisor as early in your studies as possible to plan your course schedule and discuss career goals.

There is also a collection of advisement documents on the chemistry department website. You can find information about career opportunities for chemists, job-hunting tips, and other resources.

**Courses of Study:** The Bachelor of Science degree is generally recommended for students planning to make a career as a chemist, including going on to graduate school. Students interested in medical or other professional careers are generally advised to take the Bachelor of Arts degree.

**Preprofessional Advisement:** The campus pre-professional advisor is Dr. Steven Silbering (silbering@brooklyn.cuny.edu). Students interested in medical or other professional schools are strongly urged to speak to him as soon as possible to plan their course of study.

**Research Experience:** Students may obtain research work in any laboratory that agrees to host them, and may begin at any time. Students are encouraged to look for mentors on campus and at the many medical and research institutions around New York City. Some institutions offer paid summer research internships in which students live and work on site for 8-10 weeks, e.g. the National Science Foundation Research Experiences for Undergraduates program.

Those seeking academic credit for research within the Department of Chemistry should register either for the Chem 5010 – 5030 (2 credits) or Chem 5110 – 5130 series (3 credits, Honors). Chem 5110 - 5130 require a GPA of 3.2 or better within the major to register. Students seeking to register for these courses must work with a chemistry department faculty member; those working with faculty outside the department should register for an independent study course in that program.

The format for Chem 5010 and 5110 is very much the same. Prospective students should find a faculty member whose work interests them; a list of faculty and their research interests is available on the Brooklyn College website. Once students have found a mentor, they should contact the faculty member to discuss possibilities. If the student and mentor agree on a project and a set of expectations, the mentor will grant the student permission to register for the course.

Research requires time, and students should be sure they can follow through on their commitment before registering for credit. Students may choose to work in a lab without registering for a course, provided the mentor allows it. However, a student working in that position is still obligated to meet the mentor's expectations, and should communicate about possible problems with time or scheduling and work with the mentor to resolve them.

**Residency Requirement:** Only Chemistry courses taken at Brooklyn College can be used to meet the 24 credit residency requirement. Course taken elsewhere or in other departments cannot be used to satisfy this requirement.

**Degree Audit:** At the end of their junior year, students should go to the Registrar's office and request an official Degree Audit. This represents a list of all requirements the student must fulfill to graduate and commits the college to confer the degree once the specified work is completed. This is far superior to DegreeWorks (WebSIMS).

**Departmental Honors:** Students who graduate with a GPA of 3.50 or better within the Chemistry Department, and have completed 3 or more credits in honors courses in Chemistry, are eligible for departmental honors. Honors courses in Chemistry include Chem 5110, 5120, and 5130. Students who believe they may be eligible for honors should contact the departmental advisor during their senior year.

**Graduating:** Throughout your college career, come to see your undergraduate advisor at least once a year, and more often if you have questions. Bring this schedule with you to save time.

*At the end of your junior year:* Request a Degree Audit (see above) to insure a timely graduation.

*Do not leave INC or ABS grades sitting:* If you receive an ABS or an INC grade, work with the appropriate department to resolve it quickly. Check your transcript periodically to make sure it is cleared. Your graduation can be delayed by pending INC/ABS grades.

**Job Hunting:** Good opportunities exist for chemists, both at the bachelors level and for those with higher degrees. There are links to job-hunting resources on the Chemistry Department website. Students should also go to the Magner Center for advice on job-seeking and other issues, such as resumé writing and dressing for success.

**Graduate School:** Students completing the BS in Chemistry and wishing to study further should consider either a Masters or a PhD in Chemistry or the related disciplines such as Biochemistry, Materials Science and Forensic Science. Research experience is a critical prerequisite for graduate school, and students should commit as much time to it as possible. This not only provides students with useful skills, it make it possible for a research advisor to write a strong letter of recommendation. Those interested in graduate school should begin the application process in the summer after their junior year. This should include identifying programs of interest and acquiring information about applications (including deadlines!). Students should also plan to take the GRE during the summer of their junior year to insure the scores are on file in time to support their application. Applicants will need both the subject area GRE (Chemistry, Biochemistry, etc.) and the general exam. Students should not attempt to do both on the same day, as this is grueling and can lead to poor performance.