



Chemistry

0107 Chemistry Building
(301) 405-1788

<http://www.chem.umd.edu/undergraduateprogram>
College of Computer, Mathematical, & Natural Sciences

Key Features of a Chemistry Major

- A chance to work in “the central science”, which forms a bridge between all scientific fields: biology and medicine, physics and material sciences, earth and planetary science.
- A wealth of research opportunities are available to undergraduate students, both on and off campus.
- Train with nationally and internationally recognized faculty, integral members of professional organizations, and editors of well-recognized professional journals.

Career Options and Potential Salaries with a Chemistry Major

Chemistry graduates will find a wide variety of career paths from which to choose. Many students pursue an advanced degree in graduate school or in the health professions (medicine, dentistry, pharmacology, etc.). You might choose to follow a career in industry, working in product development, testing, and research. If you have a strong interest in the environment, you may wish to work in environmental chemistry: waste treatment, industrial hygiene, measuring of environmental toxins. Many government agencies employ chemists, too, in order to develop new analytical techniques. Government chemists also provide measurements for standardization, merge computers and chemistry, and perform laboratory research.

The median annual salary for chemists in 2015 was \$72,610.

Career information taken from the Department of Chemistry, University of Maryland
(<http://www.chem.umd.edu/undergraduateprogram/prospectivestudents>).

Salary information taken from Occupational Outlook Handbook, 2015-16 Edition, Chemists and Materials Scientists, at <http://www.bls.gov/ooh/life-physical-and-social-science/chemists-and-materials-scientists.htm>.

Advising

1. Make an appointment to see an advisor for advising (301)-405-1791.
2. Students who would like more information about majors in Biological Sciences, Chemistry, Biochemistry or ENSP-Biodiversity and Conservation should attend an informational session offered by the College. No prior reservations are necessary, but strongly encouraged. Please email cmnslep@umd.edu.
3. To view dates and times for information sessions for the current semester, please visit <http://cmns.umd.edu/cmnsmajorchange/lep-informational-sessions>.

Declaring a Chemistry Major

Chemistry is a Limited Enrollment Program (LEP) which means that students must apply for enrollment in the major after completing certain pre-requisite, or "Gateway," courses; however, if you are in your first semester at the University of Maryland and this is your first semester of college coursework, you can apply to transfer into Chemistry through the Office of Undergraduate Admissions on the ground floor of the Mitchell Building. All students beyond their first semester at the University of Maryland must complete the following requirements before applying to the Department of Chemistry:

- Completion of MATH 140 and 141 with a minimum grade of C-
- Completion of (CHEM 146 AND 177) or (CHEM131 AND 132) with minimum grades of C-
- Completion of CHEM 237 or (CHEM 231 AND 232) with minimum grades of C-
- A minimum grade point average of 2.7 in all courses taken at the University of Maryland and all other institutions is required for internal and external transfer students.

Please also note:

- Only one gateway or performance review course may be repeated to earn the required grade and that course may only be repeated once. When more than one course can satisfy a gateway requirement, taking a second course from the list will count as a repeat. **This policy will be in effect for all students who first matriculated at the University of Maryland in Spring 2015 or later.** A "W" or withdrawal counts as one attempt at a course.
- Students may apply only once to an LEP. Students who are directly admitted and fail to meet the performance review criteria will be dismissed from the major and may not reapply.
- Students must maintain a minimum cumulative GPA of 2.0. Failure to do so will result in dismissal from the major.
- Any student denied admission or dismissed from the major may appeal in writing directly to the Assistant Dean for Student Services – 1300 Symons Hall.

In order to apply, you must:

- 1) Fulfill the requirements listed on www.lep.umd.edu.
- 2) Visit <http://www.admissions.umd.edu/apply/LEPApplication.php> in order to access the online application. You can also review application deadline dates and anticipated decision notification dates at this Web address.
- 3) If you have any questions regarding the completion or submission of your application, please contact the Office of Limited Enrollment Programs at lep@umd.edu.

Four-Year Plan (General Education)

First Year:

CHEM 131	3
CHEM 132 (NL)	1
ENGL 101 (AW)	3
MATH 140 (AR)	4
HU*	3
<u>UNIV 100</u>	<u>1</u>
	15 credits

CHEM 231	3
CHEM 232	1
BSCI 170/171 (formerly 105)	4
MATH 141	4
<u>HU*</u>	<u>3</u>
	15 credits

Second Year:

CHEM 241	3
CHEM 242	1
PHYS 161	4
Elective	3
<u>HS*</u>	<u>3</u>
	14 credits

CHEM 271	2
CHEM 272	2
PHYS 260+261	4
MATH 241 (recommended)	4
<u>SP (outside major)</u>	<u>3</u>
	15 credits

Third Year:

CHEM 481	3
CHEM 483	3
Elective	3
HS*	3
<u>Elective</u>	<u>3</u>
	15 credits

CHEM 482	3
CHEM 484	2
CHEM 395	1
OC	3
Elective	3
<u>Elective</u>	<u>3</u>
	15 credits

Fourth Year:

CHEM 425	4
CHEM Elective (3xx-4xx)	3
PW	3
Elective	3
<u>Elective</u>	<u>3</u>
	16 credits

CHEM 401	3
CHEM Elective (3xx-4xx)	3
SP	3
Elective	3
<u>Elective</u>	<u>3</u>
	15 credits

*All students must complete two Distributive Studies courses that are approved I-Series courses. Students must also complete Understanding Plural Society and Cultural Competence courses that may also fulfill a Distributive Studies category.

Total = 120 credits

Four Year Plan (CORE)

First Year:

CHEM 131	3
CHEM 132	1
CORE	3
MATH 140	4
ENGL 101	3
<u>UNIV 100</u>	<u>1</u>
	15 credits

CHEM 231	3
CHEM 232	1
MATH 141	4
CORE	3
<u>BSCI 170/171 (formerly 105)</u>	<u>4</u>
	15 credits

Second Year:

CHEM 241	3
CHEM 242	1
PHYS 161	3
CORE	3
CORE	3
<u>Elective</u>	<u>3</u>
	16 credits

CHEM 276	2
CHEM 277	2
PHYS 260+261	4
MATH 241 (recommended)	4
<u>CORE</u>	<u>3</u>
	15 credits

Third Year:

CHEM 481	3
CHEM 483	2
ENGL 39x	3
CORE	3
<u>Elective</u>	<u>3</u>
	14 credits

CHEM 482	3
CHEM 484	2
Electives	3
CHEM 395	1
CORE	3
<u>Advanced Studies</u>	<u>3</u>
	15 credits

Fourth Year:

CHEM 425	4
CHEM UL	3
Elective	6
<u>Capstone</u>	<u>3</u>
	16 credits

CHEM UL	3
CHEM 401	3
<u>Elective</u>	<u>9</u>
	15 credits

TOTAL = 120 credits

Q & A

Is chemistry or biochemistry a good major for getting into medical school?

Yes and no. It's certainly true that chemistry and biochemistry are challenging majors, and doing well as a chemistry or biochemistry major will reflect well upon you when you apply to medical or other professional school. It is also true, however, that significant numbers of students who are accepted into medical training programs every year have majored in non-science fields.

The most important characteristic of students who get into professional schools is that they have excelled in their studies. There is simply no short-cut or way around this. Since students are most likely to do well in subjects that interest them, the most important criteria for choosing a major should be that the subject interests you.

I noticed that there are special versions of the introductory courses for CHEM majors (CHEM 146-147, CHEM 237, etc.). Do I have to take them if I want to be a chemistry or biochemistry major?

No. If you want to take the larger unrestricted introductory courses, you can, and they will count toward the major requirements. However, the majors courses are smaller, they have a different laboratory experience (exercises that are impossible to do on the large scale of the unrestricted courses), and they are full of students who have similar interests.

Is it really possible to finish a chemistry degree in four years?

Absolutely! Every year, a significant fraction of graduates are fourth-year seniors. Because the major is so structured, it is critically important that chemistry majors (and prospective majors) take the time to carefully plan out their path to completion.

What kind of research opportunities will I have as a Chemistry major?

Getting involved in a research project while an undergraduate is an outstanding way to experience the process and rewards of doing science. For many students, their undergraduate research work is the single most rewarding experience of their entire undergraduate career. Undergraduate research experience is particularly valuable for chemistry majors, including those students who aspire to careers in scientific research, medicine and other science-based professions.

Students who work on an undergraduate research project may be eligible for departmental [honors](#) upon graduation. Arrange a meeting with a [faculty member](#) whose research interests you, or with one of your course professors, to discuss their research and possible opportunities in their laboratory.