

# Chemistry, Minor

Gizelle Sherwood, Director of Undergraduate Studies  
Location: Doherty Hall 1316

Umi Davis, Undergraduate Academic Program Coordinator  
Location: Doherty Hall 1317

[www.chem.cmu.edu](http://www.chem.cmu.edu) (<http://www.chem.cmu.edu>)

## Minor in Chemistry

### Overview

Students pursuing a B.S. or B.A. in another primary department may earn a minor in Chemistry by successfully completing **six** courses, distributed as described below.

To declare the minor, students must notify the Chemistry Department in writing using the MCS Minor Declaration Form. The form is available on the MCS undergraduate advising website (<https://www.cmu.edu/mcs/academics/undergrad/advising/forms>) and should be submitted to the Chemistry Department Office (DH 1317) or emailed to [keishawd@andrew.cmu.edu](mailto:keishawd@andrew.cmu.edu) no later than the end of the add period of your final semester.

If you later decide not to complete the minor, please notify the Director of Undergraduate Studies, Dr. Gizelle Sherwood ([gsherwoo@andrew.cmu.edu](mailto:gsherwoo@andrew.cmu.edu)), so it can be removed from your record.

### Course Requirements

#### prerequisite

The introductory chemistry course (either 09-105 Introduction to Modern Chemistry I or 09-107 Honors Chemistry: Fundamentals, Concepts and Applications) is a presumed prerequisite for beginning the minor, but it does not count toward the six required courses.

#### A. Four (4) Required Core Courses

|                                                                                                         | Units |
|---------------------------------------------------------------------------------------------------------|-------|
| 09-106 Modern Chemistry II                                                                              | 10    |
| 09-221 Laboratory I: Introduction to Chemical Analysis<br>or 09-207 Techniques in Quantitative Analysis | 9-12  |
| 09-217 Organic Chemistry I<br>or 09-219 Modern Organic Chemistry                                        | 9-10  |
| Choice of one of the following courses:                                                                 |       |
| 09-331 Modern Analytical Instrumentation                                                                | 9     |
| 09-344 Physical Chemistry (Quantum): Microscopic Principles of Physical Chemistry                       | 9     |
| 09-345 Physical Chemistry (Thermo): Macroscopic Principles of Physical Chemistry                        | 9     |
| 09-348 Inorganic Chemistry                                                                              | 10    |
| 09-507 Nanoparticles                                                                                    | 9     |
| 09-529 Introduction to Sustainable Energy Science                                                       | 9     |

**Note:** A course used in **Part A** may not also be used as an elective in **Part B**.

#### B. Two (2) Elective Courses from the following list.

|                                                                                                                 |      |
|-----------------------------------------------------------------------------------------------------------------|------|
| 09-344 Physical Chemistry (Quantum): Microscopic Principles of Physical Chemistry                               | 9    |
| 09-345 Physical Chemistry (Thermo): Macroscopic Principles of Physical Chemistry                                | 9    |
| 09-348 Inorganic Chemistry                                                                                      | 10   |
| 09-222 Laboratory II: Organic Synthesis and Analysis<br>or 09-208 Techniques for Organic Synthesis and Analysis | 9-12 |
| 09-218 Organic Chemistry II<br>or 09-220 Modern Organic Chemistry II                                            | 9-10 |
| 03-231/232 Honors Biochemistry                                                                                  | 9    |
| 09-381 Environmental Systems on a Changing Planet                                                               | 12   |
| 09-403 Hooked: The Chemical Basis of Drug Addiction                                                             | 9    |
| 09-502/741 Organic Chemistry of Polymers                                                                        | 9    |

|                                                                                                        |    |
|--------------------------------------------------------------------------------------------------------|----|
| 09-507/707 Nanoparticles                                                                               | 9  |
| 09-510/710 Chemistry and Sustainability                                                                | 9  |
| 09-518/718 Bioorganic Chemistry: Nucleic Acids and Carbohydrates                                       | 9  |
| 09-519/719 Bioorganic Chemistry: Peptides, Proteins and Combinatorial Chemistry                        | 9  |
| 09-524/724 Environmental Chemistry                                                                     | 9  |
| 09-525 Transition Metal Chemistry                                                                      | 9  |
| 09-530/730 Chemistry of Gene Expression                                                                | 9  |
| 09-538/738 Exposure and Risk Assessment for Environmental Pollutants                                   | 9  |
| 09-563/763 Molecular Modeling and Computational Chemistry                                              | 9  |
| 09-615 Computational Modeling, Statistical Analysis and Machine Learning in Science                    | 12 |
| 09-616 Neural Networks & Deep Learning in Science                                                      | 12 |
| 09-714 Advanced Organic Chemistry                                                                      | 12 |
| 09-737 Medicinal Chemistry and Drug Development                                                        | 12 |
| 09-760 The Molecular Basis of Polymer Mechanics                                                        | 12 |
| 09-xxx Approved Upper Level Chemistry Course (must be 09-3xx or higher but see exclusions noted below) |    |

### Important Policies & Exclusions

- Courses used to fulfill the Chemistry minor must not be required by your primary major or another declared minor/additional major (except as free electives).
  - Example: Biological Sciences majors may not count 03-231 Honors Biochemistry/03-232 Biochemistry I, 09-208 Techniques for Organic Synthesis and Analysis/09-222 Laboratory II: Organic Synthesis and Analysis, or 09-218 Organic Chemistry II/09-220 Modern Organic Chemistry II toward the minor.
  - Chemical Engineering majors may not count 03-231 Honors Biochemistry/03-232 Biochemistry I, though some may apply one advanced elective depending on course overlap.
- The following do not count toward the minor: 09-231 Mathematical Methods for Chemists, 09-445 Undergraduate Research, 09-435 Independent Study Chemistry.
- Chemistry courses taken for the pre-health program may count toward the minor as long as they are not also being used for another major or minor.
- Transfer credit will only be accepted for: 09-105 Introduction to Modern Chemistry I, 09-106 Modern Chemistry II, 09-217 Organic Chemistry I. All other courses must be completed in residence at Carnegie Mellon.