

Associate in Science - Transfer (AS-T)

Chemistry

Chemistry explores matter and the basic properties and processes that surround us. Prepare for advanced studies and to work in a laboratory, manufacturing, research, management, environmental services and related fields. Analysts and technicians assist scientists in general lab work or process control. Students can also specialize in chemistry education.

For a roadmap that identifies the preferred sequencing of courses and other specific recommendations from faculty, please see the corresponding program map(s):

- [Chemistry Associate in Science - Transfer \(AS-T\)](http://lowercolumbia.edu/program-maps/stem/AST-Chemistry) (lowercolumbia.edu/program-maps/stem/AST-Chemistry)

Degree Requirements

Total credits required to earn this degree: 90 with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

LCC students must meet distribution requirements for associate degrees and specific certificates. See [Diversity and Distribution Lists](http://lowercolumbia.edu/publications/catalog/distribution-lists/) (lowercolumbia.edu/publications/catalog/distribution-lists/) for more information.

General Education Requirements

- **Communications:**

5 credits - ENGL& 101 English Composition I.

- **Quantitative / Symbolic Reasoning Skills:**

10 credits – MATH& 151* Calculus I **AND**
MATH& 152* Calculus II.

- **Humanities / Social Sciences:**

15 credits – Selected from at least three disciplines on the *Distribution List*. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.

- **Diversity:**

5 credits – From the *Diversity Course List*. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

- **Electives:**

Sufficient additional college-level credits to meet the 90 credit minimum. These remaining credits must include program advisor approved credits.

Program Requirements

Pre-Major Requirements

*It is recommended that sequence courses be completed at one institution.

| Course Code | Course Title | Number of Credits |
|-----------------------------------|---|-------------------|
| CHEM& 161* | General Chemistry w/Lab I | 5 |
| CHEM& 162* | General Chemistry w/Lab II | 5 |
| CHEM& 163* | General Chemistry w/Lab III | 5 |
| MATH& 146 OR MATH& 153* | Introduction to Statistics OR Calculus III | 5 |
| PHYS& 221* | Engr Physics I w/Lab | 5 |
| PHYS& 222* | Engr Physics II w/Lab | 5 |
| PHYS& 223* | Engr Physics III w/Lab | 5 |
| CHEM& 261* | Organic Chemistry w/Lab I | 5 |
| CHEM& 262* | Organic Chemistry w/Lab II | 5 |
| CHEM& 263* | Organic Chemistry w/Lab III | 5 |

Recommended Electives

| Course Code | Course Title | Number of Credits |
|-------------|------------------------|-------------------|
| CHEM 231 | Quantitative Analysis | 5 |
| MATH 220 | Linear Algebra | 5 |
| MATH 240 | Differential Equations | 5 |

Program Outcomes

Students completing this program should acquire the following skills and abilities:

- Will have foundations in the concepts and applications of current chemical and scientific theories.
- Ability to design, carry-out, record and analyze the results of chemical experiments.
- Ability to use modern instrumentation and classical techniques to design experiments, and to properly record the results of their experiments.
- Skilled in problem solving, critical thinking, and analytical reasoning.
- Students completing a Chemistry AS-T degree will be prepared for transfer to a chemistry program at baccalaureate-granting colleges and universities. Transfer readiness is evidenced by skills in applying scientific principles, using technology and mathematics to solve chemistry problems; understanding experimental processes; and understanding of chemical conceptual content.
- Will show evidence of ability in college-wide outcomes: numeracy, critical reasoning, Revised communication, and interpersonal skills.

Notes

Revised March 2019 (effective Summer 2019)

Program planning is based on information available at the time of preparation. It is the student's responsibility to meet with their LCC advisor *and* for checking specific major requirements of baccalaureate institutions in the year prior to transferring. Consult the LCC catalog for LCC graduation requirements.

Most four-year universities require one year of a single foreign language as a graduation requirement.