

Chemistry - AS-T



2022-23

Program map for Chemistry Associate in Science-Transfer (AS-T)

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.

See also

- [Degree Requirements for Science, Technology, Engineering and Math programs \(lowercolumbia.edu/programs/stem \)](https://lowercolumbia.edu/programs/stem/)
- [Course descriptions in LCC Catalog \(lowercolumbia.edu/publications/catalog/courses \)](https://lowercolumbia.edu/publications/catalog/courses)
- [Distribution lists in LCC Catalog \(lowercolumbia.edu/publications/catalog/distribution-lists \)](https://lowercolumbia.edu/publications/catalog/distribution-lists)

(lowercolumbia.edu/program-maps/stem/) **Important:** Many course sequences only begin in fall quarter. Check with your program advisor.

By Quarter Overview

First Quarter

- CHEM& 161: General Chemistry w/ Lab I (5 credits)
- COLL 101: College Success 101 (2 credits)
- MATH& 141: Precalculus I (6 credits)

Make plan with advisor (lowercolumbia.edu/advising/meet-with-advisor)

Second Quarter

- CHEM& 162: General Chemistry w/ Lab II (5 credits)
- MATH& 142: Pre-Calculus II (5 credits)
- Choose one:
 - ART& 100: Art Appreciation (5 credits)
 - CMST 250: Intercultural Communication (5 credits)
 - HIST& 126: World Civilization I (5 credits)

Third Quarter

- CHEM& 163: General Chemistry w/ Lab III (5 credits)
- ENGL& 101: English Composition I (5 credits)
- Choose one:
 - ANTH& 100: Survey of Anthropology (5 credits)
 - ANTH& 206: Cultural Anthropology (5 credits)
 - ECON& 201: Micro Economics (5 credits)
 - ECON& 202: Macro Economics (5 credits)
 - HIST& 128: Western Civ III (5 credits)
 - HIST& 215: Women in US History (5 credits)

Research 4-year schools (lowercolumbia.edu/university-center)

Fourth Quarter

- CHEM& 261: Organic Chemistry w/ Lab I (5 credits)
- MATH& 151: Calculus I (5 credits)

Research 4-year schools (lowercolumbia.edu/university-center)

Fifth Quarter

- CHEM& 262: Organic Chemistry w/ Lab II (5 credits)
- MATH& 152: Calculus II (5 credits)

Sixth Quarter

- CHEM& 263: Organic Chemistry w/ Lab III (5 credits)
- MATH& 153: Calculus III (5 credits)

Seventh Quarter

- PHYS& 221: Engineering Physics I w/ Lab (5 credits)
- MATH& 254: Calculus IV (5 credits)

Visit 4-year schools (lowercolumbia.edu/university-center)

Eighth Quarter

- PHYS& 222: Engineering Physics II w/ Lab (5 credits)
- MATH 240: Differential Equations (5 credits)

**Pre- and co-requisite(s)*

Apply to 4-year schools (lowercolumbia.edu/university-center)

Ninth Quarter

- PHYS& 223: Engineering Physics III w/ Lab(5 credits)
- Choose one:
 - ANTH& 100: Survey of Anthropology (5 credits)
 - ANTH& 206: Cultural Anthropology (5 credits)
 - ECON& 201: Micro Economics (5 credits)
 - ECON& 202: Macro Economics (5 credits)
 - HIST& 128: Western Civ III (5 credits)
 - HIST& 215: Women in US History (5 credits)
- MATH 220: Linear Algebra (5 credits)

[Apply for Graduation \(lowercolumbia.edu/graduation \)](https://lowercolumbia.edu/graduation)

Detailed Class Sequence

1. Pre-Major Requirement

CHEM& 161: General Chemistry w/ Lab I (5 credits)

- *Prerequisites: CHEM& 100 or high school chemistry and MATH 098.*

2. College Success

COLL 101: College Success 101 (2 credits)

3. Prerequisite Coursework

MATH& 141: Precalculus I (6 credits)

- *Prerequisites: C or better in MATH 098, B or better in ABE 092, or placement.*

4. Pre-Major Requirement

CHEM& 162: General Chemistry w/ Lab II (5 credits)

- *Prerequisites: CHEM& 161*

5. Prerequisite Coursework

MATH& 142: Precalculus II (5 credits)

- *Prerequisites: C or better in MATH& 141.*

6. Humanities / Diversity Requirement

Choose one of these recommended courses:

- ART& 100: Art Appreciation (5 credits)
- CMST 250: Intercultural Communication (5 credits)
 - *Fulfills [DIVR] requirement at WSU*
- HIST& 126: World Civilization I (5 credits)
 - *Fulfills [DIVR] requirement at WSU*

7. Pre-Major Requirement

CHEM& 163: General Chemistry w/ Lab III (5 credits)

- *Prerequisites: CHEM& 162*

8. Communications Requirement

ENGL& 101: English Comp I (5 credits)

- *Prerequisites: College level reading and writing skills or completion of ENGL 099 or TECH 105 with a grade of C or better.*

9. Social Science Requirement

Choose one of these recommended courses:

- ANTH& 100: Survey of Anthropology (5 credits)
 - *Fulfills [DIVR] requirement at WSU*
- ANTH& 206: Cultural Anthropology (5 credits)
 - *Fulfills [DIVR] requirement at WSU*
- ECON& 201: Micro Economics (5 credits)
 - *Prerequisites: MATH 088 or TECH 088 or BUS 104 and ENGL& 101 or BUS 190.*
- ECON& 202: Macro Economics (5 credits)
 - *Prerequisite: ECON& 201 or instructor permission.*
- HIST& 128: Western Civ III (5 credits)
 - *Fulfills [ROOT] requirement at WSU*
- HIST& 215: Women in US History (5 credits)
 - *Fulfills [DIVR] requirement at WSU*

10. Pre-Major Requirement

CHEM& 261: Organic Chemistry w/ Lab I (5 credits)

- *Prerequisite: CHEM& 163 or instructor permission.*

11. Math Requirement

MATH& 151: Calculus I (5 credits)

- *Prerequisites: MATH& 142 with a grade of C or better.*

12. Pre-Major Requirement

CHEM& 262: Organic Chemistry w/ Lab II (5 credits)

- *Prerequisites: CHEM& 261*

13. Math Requirement

MATH& 152: Calculus II (5 credits)

- *Prerequisite: MATH& 151 with a grade of C or better.*

14. Pre-Major Requirement

CHEM& 263: Organic Chemistry w/ Lab III (5 credits)

- *Prerequisite: CHEM& 262*

15. Pre-Major Requirement

MATH& 153: Calculus III (5 credits)

- *Prerequisite: MATH& 152 with a grade of C or better.*

16. Pre-Major Requirement

PHYS& 221: Engineering Physics I w/ Lab (5 credits)

- *Prerequisites: Completion of or concurrent enrollment in MATH& 151 or instructor permission.*

17. Recommended Elective

MATH& 254: Calculus IV (5 credits)

- *Prerequisites: MATH& 153 with a grade of C or better.*

18. Pre-Major Requirement

PHYS& 222: Engineering Physics II w/ Lab (5 credits)

- *Prerequisites: PHYS& 221, MATH& 152 or instructor permission.*

19. Recommended Elective

MATH 240: Differential Equations (5 credits)

- *Prerequisite: MATH& 254 with a grade of C or better.*

20. Pre-Major Requirement

PHYS& 223: Engineering Physics III w/ Lab (5 credits)

- *Prerequisites: PHYS& 222 or instructor permission.*

21. Social Science Requirement

Choose one of these recommended courses:

- ANTH& 100: Survey of Anthropology (5 credits)
 - *Fulfills [DIVR] requirement at WSU*
- ANTH& 206: Cultural Anthropology (5 credits)
 - *Fulfills [DIVR] requirement at WSU*
- ECON& 201: Micro Economics (5 credits)
 - *Prerequisites: MATH 088 or TECH 088 or BUS 104 and ENGL& 101 or BUS 190.*
- ECON& 202: Macro Economics (5 credits)
 - *Prerequisite: ECON& 201 or instructor permission.*
- HIST& 128: Western Civ III (5 credits)
 - *Fulfills [ROOT] requirement at WSU*
- HIST& 215: Women in US History (5 credits)
 - *Fulfills [DIVR] requirement at WSU*

22. Recommended Elective

MATH 220: Linear Algebra (5 credits)

- *Prerequisite: MATH& 152 with a grade of C or better.*



Program Maps for Science, Technology, Engineering and Math (STEM) (lowercolumbia.edu/program-maps/stem)

- [Bioengineering and Chemical Pre-Engineering AS-T \(Chemical Option\) \(lowercolumbia.edu/program-maps/stem/AST-Bioengineering-and-Chemical-Pre-Engineering-Chemical-Option \)](http://lowercolumbia.edu/program-maps/stem/AST-Bioengineering-and-Chemical-Pre-Engineering-Chemical-Option)
- [Bioengineering and Chemical Pre-Engineering AS-T \(Bioengineering Option\) \(lowercolumbia.edu/program-maps/stem/AST-Bioengineering-and-Chemical-Pre-Engineering-Bioengineering-Option \)](http://lowercolumbia.edu/program-maps/stem/AST-Bioengineering-and-Chemical-Pre-Engineering-Bioengineering-Option)
- [Biological Sciences - AS-T \(lowercolumbia.edu/program-maps/stem/AST-Biological-Sciences \)](http://lowercolumbia.edu/program-maps/stem/AST-Biological-Sciences)
- [Biology - DTA/MRP \(lowercolumbia.edu/program-maps/stem/DTA-MRP-Biology \)](http://lowercolumbia.edu/program-maps/stem/DTA-MRP-Biology)

- **Chemistry - AS-T** (lowercolumbia.edu/program-maps/stem/AST-Chemistry)
- **Computer Science - AST** (lowercolumbia.edu/program-maps/stem/AST-Computer-Science)
- **Computer Science AS-T (WSU-V)** (lowercolumbia.edu/program-maps/stem/AST-Computer-Science-WSU-V)
- **Computer and Electrical Pre-Engineering - AS-T COMP E EE/MRP (2 year)** (lowercolumbia.edu/program-maps/stem/AST-Computer-and-Electrical-Pre-Engineering-2-year)
- **Computer and Electrical Pre-Engineering - AS-T COMP E EE/MRP (3 year)** (lowercolumbia.edu/program-maps/stem/AST-Computer-and-Electrical-Pre-Engineering-3-year)
- **Earth Sciences - AA-DTA** (lowercolumbia.edu/program-maps/stem/AADTA-Earth-Sciences)
- **Earth Sciences - AS-T** (lowercolumbia.edu/program-maps/stem/AST-Earth-Sciences)
- **Environmental Science - AS-T** (lowercolumbia.edu/program-maps/stem/AST-Environmental-Science)
- **Mechanical, Civil, Aeronautical, Industrial, Materials Science Engineering - AS-T (2 year)** (lowercolumbia.edu/program-maps/stem/AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering-2-year)
- **Mechanical, Civil, Aeronautical, Industrial, and Materials Science Engineering AS-T (3 year)** (lowercolumbia.edu/program-maps/stem/AST-Mechanical-Civil-Aeronautical-Industrial-Materials-Science-Engineering-3-year)
- **Physics - AS-T** (lowercolumbia.edu/program-maps/stem/AST-Physics)
- **Physics - AS-T (Math Transfer Option)** (lowercolumbia.edu/program-maps/stem/AST-Physics-Math-Transfer-Option)