

TRANSFER STUDENT GUIDE TO THE CHEMISTRY MAJOR

The Emory Department of Chemistry has recently re-designed the undergraduate chemistry curriculum. While we are proud and excited about these innovations, we acknowledge that it can be challenging for some transfer students to identify where they should begin in our curriculum.

The challenge for transfer students is that having completed a year (2 courses) of general chemistry will not prepare students to take Chem 203, our third core course. This is because Chem 203 builds on concepts and skills that are conventionally part of organic chemistry curriculum, but which we introduce in Chem 150 and develop throughout Chem 202. Furthermore, Chem 202 and Chem 202L are not offered in the fall, and Chem 203 and 203L are not offered in the spring.

To assist transfer students in understanding their best path forward, below are helpful descriptions of our core courses written with transfer students in mind as well as a couple of typical scenarios followed by guidance on what a student in that situation should do.

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CORE COURSE DESCRIPTIONS FOR TRANSFER STUDENTS

Please note, the descriptions below are unofficial descriptions written to assist transfer students and advisors in understanding how our courses fit with traditional chemistry curriculum. To review the official course descriptions, please visit the [College Course Catalog](#).

CHEM 150, “Structure and Properties”: focuses on atoms, models for how they bond together to form molecules, and how to describe and predict the geometrical structures of those molecules. The semester concludes with a discussion of how molecular structure influences intermolecular interactions, and the implications for material properties. These are normal topics for a first-semester college chemistry course, although with a greater emphasis on defining and representing the 3-dimensional structures of organic molecules.

CHEM 202, “Principles of Reactivity”: introduces the foundational concepts of chemical thermodynamics, equilibrium, and kinetics, exemplified by three classes of reaction: proton transfer (acid-base), acyl substitutions, and alkyl substitutions. This class covers much of the quantitative material found in a general chemistry course but is distinctive in its emphasis on how structure and mechanism contribute to determining thermodynamic and kinetic aspects of specific organic reactions.

CHEM 203, “Advanced Reactivity”: continues to apply the main themes from Chem 202, while highlighting the use of molecular orbital theory to explain and predict selectivity between competing reaction pathways, using examples of organic and organometallic reactions of synthetic and biological relevance.

CHEM 204, “Macromolecules”: encompasses structure, synthesis, properties, and reactivity of biomacromolecules such as proteins and carbohydrates, and synthetic polymers such as common plastics. This class weaves together the concepts of structure, mechanisms, kinetics, thermodynamics, and intermolecular interactions as they apply to macromolecular structures.

CHEM 205, “Light and Matter”: places the topics of orbitals and bonding on a more quantitative footing using the equations of quantum mechanics. The principles that govern the ability of molecules to absorb and emit light and other forms of electromagnetic radiation are applied to experimental spectroscopy and microscopy as well as to natural phenomena (e.g. the greenhouse effect) and common technologies (e.g. lasers and lightbulbs).

Laboratories: A parallel series of laboratory courses, 150L-205L, introduces techniques, practices, and content necessary for proficiency in the chemistry laboratory. These classes complement the classroom material but also contain their own learning objectives independent of the lecture courses.



TYPICAL SCENARIOS FOR TRANSFER STUDENTS

What can you do if you are transferring after taking 1 year of general chemistry?

If you are planning to major in chemistry, you may consult with the chemistry department's Director of Undergraduate Studies about joining the limited-enrollment 1st year sequence (starting with 202z and 202zL) that is usually reserved for first-year students entering with AP or IB credit in chemistry.

If you are not majoring in chemistry, you will probably need to take Chem 202 and Chem 202L in the spring. At the start of the semester, you will be provided with material for self-study on a few topics covered in Chem 150 that you might not have seen before.

If you are able to take summer courses at the end of your first year at Emory, we generally offer 150 and 203 (with labs) in the first summer session, and 202 and 204 (with labs) in the second summer session. So you can catch up by completing the full sequence: Chem 202 (spring), Chem 203 (summer 1) and Chem 204 (summer 2) over spring and summer.

You should consult with your major or pre-professional advisors about which chemistry classes you will need. Finally, note that the second semester of general chemistry from your previous institution will usually transfer as Chem 142. This will be visible on your transcript, and may count towards fulfilling chemistry requirements for professional school admissions, even though it does not serve as a prerequisite for later chemistry classes at Emory.

What can you do if you are transferring after taking 1 year of general chemistry and 1 year of organic chemistry?

If you are transferring after taking 1 year of organic chemistry, and wish to continue in chemistry coursework, you should consider taking Chem 204 (Macromolecules) and/or Chem 205 (Light and Matter) as your next courses.