

DEPARTMENT OF CHEMISTRY

Chemistry is the study of the world of atoms, molecules, and solids. Chemists are both students and architects of this miniature universe, exploring the changes that occur, discovering the principles that govern these chemical changes, and devising ways to create entirely new classes of compounds and materials. Previous triumphs of chemistry include the synthesis of pharmaceuticals and agricultural products, while current challenges include chemical memory, solar cells, superconductors, clean fuels, batteries, and the solution of numerous important problems relating to health and the environment.

The Department of Chemistry (<http://chemistry.mit.edu>) offers the Bachelor of Science and Doctor of Philosophy degrees. The department's program of teaching and research spans the breadth of chemistry. General areas covered include biological chemistry, inorganic chemistry, organic chemistry, and physical chemistry. Some of the activities of the department, especially those that involve "translational research" (the application of basic science to practical problems) are carried out in association with interdisciplinary laboratories and centers. See the section on Research and Study for more information (<https://catalog.mit.edu/mit/research>).

The Bachelor of Science (p.) degree provides rigorous education in the fundamental areas of chemical and biochemical knowledge and experimentation. Undergraduate students are encouraged to participate in the Undergraduate Research Opportunities Program (UROP) (<https://catalog.mit.edu/mit/undergraduate-education/academic-research-options/undergraduate-research-opportunities-program>) and to take graduate-level chemistry classes as well as subjects in other departments at the Institute, Harvard University, or Wellesley College.

The Doctor of Philosophy (p.) degree trains students to be world leaders in scientific research and education. In addition to formal coursework, each student undertakes a research problem that forms the core of graduate work. Graduate- and postgraduate-level research is often carried out in collaboration with scientists in other facilities and interdisciplinary laboratories.