

# Biology-Chemistry

## Curriculum

### Core Requirements

Students studying biology-chemistry complete the biology-chemistry core. Core courses provide general concepts and skills that all biology-chemistry majors need and that are also central to a number of other majors.

#### Pre-Pharmacy (2-year plan; not a major)

Biology-Chemistry Core w/o Principle of Biology I & II, Analytical Chemistry, and Biochemistry	28
Fundamentals of Human Physiology/Lab	4
Fundamentals of Human Anatomy/Lab	4
Microbiology/Lab	4
Statistical Analysis	4
Calculus I	4

#### Biology-Chemistry Major from Pre-Pharmacy (2-year plan)

Pre-Pharmacy (2-year plan)	48
Biochemistry I Lab (1), or Biochemistry II (3)	1-3
Advanced Human Physiology/Lab	4
Analytical Chemistry/Lab	4
Cell Biology, Genetics, Immunology/Lab, or DNA Science	4

#### Global Health Major

Biology-Chemistry Core w/o Organic Chemistry, Intro to Molecular Biology, Biochemistry I, Analytical Chemistry, Physics	16
Statistical Analysis or Statistics and Research Design	4
Global Disease	3
Introduction to Health Communication	3
Community Health Work	3
Health Economics	3
Concerning Poverty	3
Mediation and Conciliation or Conflict Resolution	3
Three selected courses	7.5-9
Seminar (W)	1

#### Biology-Chemistry Major

Biology-Chemistry Core	43
Microbiology/Lab or Cell Biology	4
Biochemistry I Lab (1) or Biochemistry II (3)	1-3
Advanced Human Physiology/Lab	4
Comparative Vertebrate Anatomy/Lab	4

#### Central Courses Biology-Chemistry Core ....43 ch

Course	Credit Hours
Principles of Biology I & II/Labs	8
General Chemistry I & II/Labs	8
Intro to Molecular Biology/Lab	4
Analytical Chemistry/Lab	4
Organic Chemistry I & II/Labs	8
Biochemistry I	3
College Physics I & II/Labs, or General Physics I & II/Labs	8

#### Environmental Studies Technical Concentration Major

Biology-Chemistry Core w/o Organic Chemistry II, Intro to Molecular Biology, Biochemistry I, Physics courses	24
Environmental Chemistry	3
Conservation Biology/Lab	3
Economic Concepts	3
Intro to Environmental Studies	3
Environmental Science	3
Internship in Env. Studies (3-6), or Special Problems (1-4)	1-6
Environmental Philosophy	3
American National Politics, or State and Local Politics	3
Ecology/Lab, or Limnology/Lab	4
Statistical Analysis	4

#### Biology Major with Chemistry Minor

Biology-Chemistry Core w/o Physics courses	35
Microbiology/Lab, DNA Science, or Cell Biology	4
Comparative Vertebrate Anatomy/Lab, or Adv Human Physiology/Lab	4
Genetic	4
Ecology/Lab, or Limnology/Lab	4
Invertebrate Zoology/Lab	4
Vascular Plant Systematics/Lab, Intro to Algae, Plants, and Fungi/Lab, or Plant Physiology/Lab	4
Orientation to Research	1
Biology electives	4

#### Chemistry Major with Biology Minor

Biology-Chemistry Core w/ General Physics I & II/Labs	43
Calculus I & II	8
Two from Biochemistry II, Advanced Organic or Advanced Inorganic	8
Physical Chemistry I & II/Labs	8
Two from Biochemistry II/Lab, Advanced Analytical Lab I or Advanced Analytical Lab II	8
Three from Microbiology/Lab, Cell Biology, Genetics, Immunology, or DNA Science	12

#### Medical Technology Major

Biology-Chemistry Core w/o Principles of Biology I, Physics, w/ Biochemistry I or Analytical Chemistry/Lab	28
Fundamentals of Human Physiology/Lab	4
Microbiology/Lab	4
Medical Terminology for Allied Health	1
Immunology	3
Orientation to Research	1
Genetics	4
Mathematical Statistics, or Statistical Analysis	4

## Biology-Chemistry

The Biology-Chemistry major at Manchester University prepares students for professional programs in the health sciences, graduate programs in biological or chemical sciences, and industrial employment as scientists.

Individualized advising by accessible faculty guides students on course work, research, internships, admission to professional/graduate programs and career preparation.

Content in the major includes conceptual and functional skills in biology, chemistry and physics. An emphasis on laboratory courses that complement lecture courses builds skills in lab technique, data analysis and communication of results.

### Learning Goals

Students will:

- Successfully integrate themes from a range of biological, physical and chemical sub-disciplines.
- Appropriately apply biological, physical and chemical principles to solve specific problems.
- Coherently discuss biological, chemical and physical issues with peers and faculty in a manner appropriate to the discipline

### Special Opportunities

- On- and off-campus research
- Science Seminars conducted by MU Natural & Health Sciences departments
- Pharmacy Early Assurance Program to the Manchester University Pharmacy Program
- Articulation agreement with Physician Assistant Program at University of Saint Francis
- Fast Track program for Marian University College of Osteopathic Medicine
- Internships and shadowing
- Summer Program Opportunities
  - Pathways Program
  - Research on North Manchester and Fort Wayne campuses



### Study Abroad

Each January session, faculty lead a course to Latin America to provide medical care to remote villages. The Medical Practicum is open to health care providers and students.

### Student Organizations

- American Chemical Society
- Pre-Professionals of Science
- Beta Beta Beta
- Pre-Pharmacy
- Environmental Group
- Students Pondering about Mathematics
- Society of Physics

### Learn More

[www.manchester.edu/biology-chemistry](http://www.manchester.edu/biology-chemistry)

Or contact:

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### Apply

[admissions.manchester.edu/apply](http://admissions.manchester.edu/apply)