

Biology-Chemistry B.S. & Pharmacogenomics M.S. (3 +1)

Year 1	Fall	January	Spring
	CHEM-111 General Chemistry I (MATH-121 Calculus I)		CHEM-113 General Chemistry II (MATH-122 Calculus II)
	BIOL-106 Principles of Biology I		BIOL-108 Principles of Biology II
	All necessary labs		All necessary labs

Year 2	Fall	January	Spring
	CHEM-311 Organic Chemistry I		CHEM-312 Organic Chemistry II
	PHYS-111 College Physics I or PHYS-210 General Physics I		PHYS-112 College Physics II or PHYS-220 General Physics II
			BIOL-229 Introduction to Molecular Biology
	All necessary labs		All necessary labs

Year 3	Fall	January	Spring
	CHEM-405 Biochemistry I (Lab) (BIOL-313 Microbiology)		BIOL-422 Advanced Human Physiology (CHEM-406 Biochemistry II)
	BIOL-364 Comparative Vertebrate Anatomy		CHEM-235 Analytical Chemistry
			(BIOL-356 Cell Biology)
			All necessary labs

Semester Hours

55-58 Biology-Chemistry Major

46 Core

16-19 Electives

120 Required

Year 4	Summer	Fall	Spring
	PGx 501 Intro to Pharmacogenomics	PGx 526 Applied Pharmacogenomics I	PGx 536 Applied Pharmacogenomics II
	PGx 510 Pharmacology	PGx 531 Bioinformatics	PGx 511 Advanced Molecular Biology
	PGx 521 Human Genetics	PGx 512 Advanced Pharmacokinetics	PGx 533 Data Analysis/Biostatistics
	PGx 514 Analytical Technology I	PGx 524 Analytical Technology II	PGx 534 Analytical Technology III
	PGx 515 Research Responsibility and Ethics		

Semester Hours

12 Summer

11 Fall

11 Spring

34 Total

Biology-Chemistry and Pharmacogenomics at Manchester University

The Biology-Chemistry Major

General Chemistry I and II
Principles of Biology I and II
(Calculus I and II)
College or General Physics I and II
Organic Chemistry I and II
Analytical Chemistry
Introduction to Molecular Biology
Microbiology or Cell Biology
Biochemistry I (and II)
Advanced Human Physiology
Comparative Vertebrate Anatomy

The Pharmacogenomics Masters

Introduction to Pharmacogenomics
Pharmacology
Human Genetics
Analytical Technology I, II, and III
Research Responsibility and Ethics
Bioinformatics
Advanced Pharmacokinetics
Advanced Molecular Biology
Data Analysis/Biostatistics

General

Research experiences both on campus and off
Academic advising with faculty
Academic science clubs
Science seminar
Mentors for shadowing experiences

After Graduation

Employment with the MS in Pharmacogenomics degree in the genetic testing and pharmacogenetic testing industries, as well as translational software companies and research laboratories.

Acceptance to medical, dental, vet, and pharmacy professional schools.

Admission to graduate programs for doctoral degrees in a wide variety of science fields.