

Genetics — Pre-Vet (VGEN)

The genetics major provides a broad foundation in the biological, physical, and mathematical sciences fundamental to the study of heredity and evolution. The major is flexible in order to serve students interested in genetics, either as a basic discipline or in its application in biotechnology, agriculture, environment/conservation, and medicine.

Freshman

Fall	Hours	Spring	Hours
ENGL 1100 English Composition I		3 ENGL 1120 English Composition II	3
CORE HISTORY I		3 MATH 1610 Calculus I	4
CHEM 1030 Fundamentals Chemistry I ¹		3 CHEM 1040 Fundamental Chemistry II ¹	3
CHEM 1031 Fundamental Chemistry I Laboratory		1 CHEM 1041 Fundamental Chemistry II Laboratory	1
BIOL 1020 Principles of Biology		3 BIOL 1030 Organismal Biology	3
BIOL 1021 Principles of Biology Laboratory		1 BIOL 1031 Organismal Biology Laboratory	1
BIOL 2100 Professional Development		1	
		15	15

Sophomore

Fall	Hours	Spring	Hours
CHEM 2070 Organic Chemistry I		3 CHEM 2080 Organic Chemistry II	3
CHEM 2071 Organic Chemistry I Laboratory		1 CHEM 2081 Organic Chemistry II Laboratory	1
CORE HIST or LITERATURE		3 BIOL 3030 Evolution and Systematics	3
Core HUMANITIES or SOCIAL SCI		3 BIOL 3020 Genom. Bio or BIOL 3200/01 Micro	4
BIOL 3000 Genetics		3 STAT 2510 Statistics for Biological and Health Sciences	3
BIOL 3001 General Genetics Laboratory		1	
		14	14

Junior

Fall	Hours	Spring	Hours
CORE LITERATURE		3 BIOL 5220 Introductory Molecular Genetics	3
BIOL 5800 Introduction to Computational Biology		3 BIOL 4100 Cell Biology	3
CORE SOCIAL SCIENCE		3 BIOL 4101 Cell Biology Laboratory	2
PHYS 1500 General Physics I		4 CORE FINE ARTS	3
BCHE 5180 Biochemistry I		3 CORE SOCIAL SCIENCE	3
		16	14

Senior

Fall	Hours	Spring	Hours
GENE CORE Elective		5 BIOL 5330 Developmental Genetics	3
GENE SUPP Elective		5 GENE CORE Elective	3
CORE HUMANITIES		3 GENE SUPP Electives	5
ANSC 3400 Animal Nutrition		4 BIOL 4950 Senior Seminar	1
BIOL 4AA0 Professional Development II		0 FREE ELECTIVE	3

Total Hours: 120

Long range schedules for COSAM courses are online at <http://aub.ie/cosamlrs>.

Courses in **BOLD** will be used to calculate GPA in major.

Options for courses labeled CORE are in the Auburn University Bulletin (<https://bulletin.auburn.edu/>) under Core Curriculum.

¹ The Chemistry 1110/1111-1120/1121 sequence can substitute for CHEM 1030/CHEM 1031-CHEM 1040/CHEM 1041. See advisor for details.

* Taken semester of graduation.

Code	Title	Hours
Genetics Electives		
GENE CORE Electives		
BIOL 3020	Genomic Biology	
BIOL 4150	Human Genetics	
BIOL 5260	Prokaryotic Molecular Genetics	
BIOL 5320	Plant Gene Expression	
BIOL 5521	Gene Expression and Recombinant DNA Laboratory	
BIOL 5850	Functional Genomics	
BIOL 5860	Bioinformatics and Genome Analysis	
GENE SUPP Electives		
Any additional GENE CORE Elective		
BIOL 3200/BIOL 3201 General Microbiology		
BIOL 4410	Vertebrate Development	
BIOL 4920	Internship in Biology (up to 4)	
BIOL 4970	Special Topics (as appropriate: i.e. Genetics of Mammalian Disease)	
BIOL 4980	Undergraduate Research (up to 6 hours)	
BIOL 5050	Fundamentals of Biophysics	
BIOL 5230	Virology	
BIOL 5500	Immunology	
BIOL 5550	Nanomedicine	
BIOL 5560	RNA in Biomedicine	
BIOL 5600	Mammalian Physiology (Biomedical Physiology)	
BCHE 5190	Biochemistry II	
PHYS 1510	General Physics II	
AGRI 3000	Agricultural Genetics	
ANSC 3500	Animal Breeding	
APBT 1000	Introduction to Applied Biotechnology	
APBT 3100	Methods of Synthetic Biology	
APBT 4100	Applied Biotechnology	
CSES 5100	Plant Genetics and Crop Improvement	
FORV 3200	Forest Tree Physiology	