

Genetics (GENE)

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
MATH 1610 Calculus I		4 CHEM 1040 Fundamental Chemistry II ¹	3
CHEM 1030 Fundamentals Chemistry I ¹		3 Core History I	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	
		16	14

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 Genomic Biology or 3200 General Microbiology	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
Free Electives		3 BIOL 4950 Senior Seminar	1

BIOL 4AA0 Professional Development II	0 Free Electives	4
	16	16

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 (www.auburn.edu/bulletin) 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.

Genetics Electives**GENE CORE Electives**

- BIOL 3020 Genomic Biology (4)
- BIOL 4150 Human Genetics (3)
- BIOL 5260 Prokaryotic Molecular Genetics (3)
- BIOL 5320 Plant Gene Expression (3)
- BIOL 5521 Gene Expression and Recombinant DNA Laboratory (2)
- BIOL 5850 Functional Genomics (3)
- BIOL 5860 Bioinformatics and Genome Analysis (3)

GENE SUPP Electives

Any additional GENE CORE Elective

- BIOL 3200/BIOL 3201 Microbiology (4)
- BIOL 4410 Vertebrate Development (5)
- 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)
- BIOL 5050 Fundamentals of Biophysics (2)
- BIOL 5230 Virology (3)
- BIOL 5500 Immunology (3)
- BIOL 5550 Nanomedicine (2)
- BIOL 5600 Mammalian Physiology (Biomedical Physiology) (5)
- BCHE 5190 Biochemistry II (3)
- PHYS 1510 General Physics II (4)
- AGRI 3000 Agricultural Genetics (4)
- ANSC 3500 Animal Breeding (3)
- APBT 1000 Introduction to Applied Biotechnology (1)
- APBT 3100 Methods of Synthetic Biology (4)
- APBT 4100 Applied Biotechnology (4)
- CSES 5100 Plant Genetics and Crop Improvement (3)
- FORY 3200 Forest Tree Physiology (3)