# **Genetics (Minor)**

The Department of Genetics offers an undergraduate Minor in Genetics to provide students with strong preparation in the principles of Genetics and Molecular Biology, as well as preparation in ancillary fields such as Statistics and Biochemistry. This Minor is appropriate for (but not limited to) students with majors in Plant and Soil Sciences, Animal Science, Biochemistry, Biological Sciences, Computer Science, Crop Science, Environmental Technology, Mathematics, Microbiology, Natural Resources, Nutrition Science, Plant Biology, Poultry Science, and Zoology.

### Admissions

Students may declare their intention to complete the Genetics minor by consulting with Dr. Gardner as listed below. Students are strongly encouraged to declare the minor early in their programs so they receive information on Genetics courses and activities from the Undergraduate Coordinator.

## Certification

The advisor will certify the minor prior to graduation. The minor must be completed no later than the semester in which the student expects to graduate from his or her degree program.

#### **Contact Person**

**Dr. Whitney Jones** 2526B Thomas Hall wmjones4@ncsu.edu

SIS Code: 17GNM

#### **Plan Requirements**

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- · Completion of 17 credit hours -- 8 credit hours of required core courses and 9 credit hours of electives.
- A grade of 'C' or better is required for all Genetics Minor courses.
- No course used in the minor can be taken for credit only (S/U) with the exception of the Research/Teaching Experience courses.
- · Courses taken for the minor can also be used toward major requirements, GEP electives, or free electives.
- · At least 9 credit hours used toward the minor must be completed at NC State University.
- · The Genetics Minor is available to all students except those majoring in Genetics.

Code	Title	Hours		
Required Core Courses				
GN 311	Principles of Genetics	4		
GN 312	Elementary Genetics Laboratory	1		
GN 421	Molecular Genetics (OR)	3		
or BCH 453	Biochemistry of Gene Expression			
Elective Courses Category A				
Select three cred	it hours from the following courses:	3		
GN 423	Population, Quantitative and Evolutionary Genet	ics		
GN 427	Introductory Bioinformatics			
GN 428	Introduction to Machine Learning in Biology			
GN 434	Genes and Development			

Т	Fotal Hours 17				
	PB 480	Introduction to Plant Biotechnology			
	MB 455	Microbial Biotechnology			
	HS 215	Agricultural Genetics <sup>2</sup>			
	GN 301	Genetics in Human Affairs			
	FOR 411	Forest Genetics			
	CS 413	Plant Breeding			
	CS 211	Plant Genetics <sup>2</sup>			
	BIT 480	Yeast Metabolic Engineering			
	BIT 479	High-Throughput Discovery			
	BIT 477	Metagenomics			
	BIT 474	Plant Genetic Engineering			
	BIT 471	RNA Interference and Model Organisms			
	BIO 432	Evolutionary Medicine			
	BIO 361	Developmental Biology			
	BIO 330	Evolutionary Biology			
	BIO 310	Quantitative Approaches to Biological Problems			
	BIO 270	Introduction to Evolution			
	ANS 440	Animal Genetic Improvement			
	ANS 215	Agricultural Genetics <sup>2</sup>			
Se ha	purs at the 300 k	evel or higher.	6		
EI	ective Courses	Category B			
	Genetics Rese	arch/Teaching Experience (3 cr)			
	GN 456	Epigenetics, Development, and Disease			
	GN 451	Genome Science			
	GN 450	Conservation Genetics			
	GN 441	Human and Biomedical Genetics			

#### **Total Hours**

- <sup>1</sup> Course options include GN 496 Genetics Research Experience, GN 497 Genetics Teaching Experience, BSC 498 Biological Sciences Honors Project Part 2, and ALS 499 Honors Research or Teaching II. To use any of these toward the Genetics Minor, the experience must involve a genetics topic and must be approved in writing by the Director of the Undergraduate Genetics Program prior to beginning the project.
- 2 Course must be taken prior to GN 311 in order to count for the Genetics minor.