

GENETICS OPTION

This option is offered within the following major(s):

- Biology - College of Science (<http://catalog.oregonstate.edu/college-departments/science/school-life-sciences/integrative-biology/biology-bs-hbs/>)

The Biology major Genetics option is designed to provide a solid background in genetic theory and methods, as well as their application to evolutionary questions. Option students couple the core biological sciences background from the Biology major with genetics laboratory-intensive course work in addition to genetics and bioinformatics electives. Undergraduate research or internship experience is strongly recommended for option students, and three credits can be applied to the Upper-division Science Elective requirements. The Genetics option is an excellent way to prepare for graduate programs in genetics and evolutionary biology.

Option Code: 517

Options in the Biology major require 15 or fewer additional credits (one term) beyond the basic Biology major, and most students can complete the additional course work in the Genetics option in four years.

Courses used to satisfy the Genetics option requirements also satisfy the Physics/Computer Science and Quantitative Applications, Physiology, Writing Intensive and Experiential Learning or Integrative Biology Elective requirements for the Biology major. The statistics courses in the Genetics option also complete half of the Biology major statistics requirement.

For further information, see MyDegrees or the Integrative Biology website (<http://ib.oregonstate.edu>).

Code	Title	Credits
Core		
BB 315	MOLECULAR BIOLOGY LABORATORY	3
BB 345	INTRODUCTION TO BIOLOGICAL SEQUENCE ANALYSIS	2
BB 494	BIOCHEMISTRY LABORATORY MOLECULAR TECHNIQUES 2	3
BI 319	^THEORY, PRACTICE AND DISCOURSE IN THE LIFE SCIENCES	3
BI 483	POPULATION BIOLOGY	3
ST 411 & ST 412	METHODS OF DATA ANALYSIS and METHODS OF DATA ANALYSIS ¹	8
Integrative Biology Elective		
Select one course from the following		3-5
BI 454	EVOLUTIONARY GENOMICS	
BI 456	PHYLOGENETICS	
Z 425	EMBRYOLOGY AND DEVELOPMENT	
Genetics Elective		
Select one course from the following		3-4
BB 486	ADVANCED MOLECULAR GENETICS	
BI 454	EVOLUTIONARY GENOMICS (if not taken above)	
BI 456	PHYLOGENETICS (if not taken above)	
BOT 458	ECOSYSTEMS GENOMICS	
BOT 460	FUNCTIONAL GENOMICS	
BOT 475	COMPARATIVE GENOMICS	
Bioinformatics Elective		
BB 485 or BOT 476	APPLIED BIOINFORMATICS or INTRODUCTION TO COMPUTING IN THE LIFE SCIENCES	3
Experiential Learning or Science Elective Courses		
Select two of the following tracks:		6

Track 1 Experiential Learning Credits

Select any combination of three credits from the following:

BI 401	RESEARCH AND SCHOLARSHIP (by approval)
BI 410	INTERNSHIP (by approval or international internships approved by the Biology Chief Advisor)

Track 2 Additional Genetics or Bioinformatics Elective

Select one additional Genetics Elective or Bioinformatics Elective from the lists above

Track 3: Additional Upper-Division Biology or Zoology Course

Select one additional three+ credit, 300–400 level Biology (BI) or Zoology (Z) course not used for major requirements ²

Total Credits 37-40

*

Baccalaureate Core Course (BCC)

^

Writing Intensive Course (WIC)

1

Following completion of ST 351

2

Excluded Courses: BI 401–BI 410 credits and BCC courses

Option Code: 517