

IOWA STATE UNIVERSITY
UNDERGRADUATE B.S. IN GENETICS DEGREE REQUIREMENTS
2022-23 CATALOG

**Links to lists of courses meeting general education and program requirements can be found here:*

<https://undergrad.genetics.iastate.edu/course-lists>

The B.S. degree requires 120 credits. Numbers in (*) are credits. At least 32 credits must be taken at ISU.

I. UNIVERSITY REQUIREMENTS: *These apply to all ISU degree programs.*

- ___ ENGL 150 (3) Critical Thinking and Communication (begin with ENGL 250 if ACT E of 24 or higher) **Minimum C**
- ___ ENGL 250 (3) Written, Oral, Visual, and Electronic Communication **Minimum C**
- ___ LIB 160 (1) Library Instruction
- ___ International Perspectives** (3) *See list from above link**
- ___ U. S. Diversity** (3) *See list from above link**

***Certain courses also meet a College requirement for Arts and Humanities or Social Sciences (dual-count)*

Advanced English Writing:

- ___ One course from ENGL 302-316 (3) or JLMC 347 (3) Science Communication **Minimum C**
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II. COLLEGE REQUIREMENTS: *The Genetics degree may be earned in either the College of Agriculture and Life Sciences or the College of Liberal Arts and Sciences. The general education requirements of each are slightly different. Graduates of either College have similar career expectations.*

OR

College of Agriculture and Life Sciences (AGLS)

- ___ SP CM 212 (3) Fundamentals of Public Speaking or AG EDS 311 (3)
- ___ Arts and Humanities (3) *See list**
- ___ Ethics (3) *See list**
- ___ Social Sciences (3) *See list**
- ___ Environmental Awareness Choice (3-4 credits) *See list from above link**

College of Liberal Arts and Sciences (LAS)

- ___ 3 years of same foreign language in high school or 4-8 credits of World Languages
 - ___ Social Sciences (9 credits) *See list from above link**
 - ___ Arts and Humanities (12 credits) including 3 credits of Sciences/Humanities Bridge *See list from above link**
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III. MAJOR REQUIREMENTS:

Life Sciences Core: Minimum C-

- ___ GEN 110 (1) Genetics Orientation *fall only*
- ___ BIOL 211 & 211L (4) Principles of Biology I
- ___ BIOL 212 & 212L (4) Principles of Biology II
- ___ BIOL/GEN 313 & L (4) Principles of Genetics
- ___ BIOL 314 (3) Molecular Cell Biology
- ___ BIOL 315 (3) Biological Evolution
- ___ MICRO 302 (3) Biology of Microorganisms

Advanced Genetics Core: Minimum C-

- ___ GEN 409 (3) Molecular Genetics *fall only*
- ___ GEN 410 (3) Analytical Genetics *spring only*
- ___ GEN 462 (3) Evolutionary Genetics *fall only*
- or* ___ EEOB 561 (3) or EEOB 563 (3) *alternate spring only*
- ___ GEN 491 (1) Undergraduate Seminar
- ___ 3-4 credits of Bioinformatics Choice
Choose from GEN 322, 349, BC BIO 401 or BC BIO 402

Advanced Genetics Electives: Minimum C-

- ___ 6 credits from list of program approved courses in Genetics and related disciplines *See list from above link**

Mathematics and Statistics:

- ___ MATH 160 (4) Survey of Calculus or MATH 165 (4) Calculus I
- ___ STAT 101 (4) Principles of Statistics or STAT 104 (3) Introduction to Statistics
- ___ MATH 166 (4) Calculus II or STAT 301 (4) Intermediate Statistical Concepts and Methods

Chemistry, Biochemistry, and Physics:

- ___ CHEM 177 & L (5) General Chemistry I
- ___ CHEM 178 & L (4) General Chemistry II
- ___ CHEM 331 & L (4) Organic Chemistry I
- ___ CHEM 332 & L (4) Organic Chemistry II
- ___ BBMB 404 (3) Biochemistry I or BBMB 420 Physiological Biochemistry (3)
- ___ BBMB 405 (3) Biochemistry II (not with BBMB 420) *or* CHEM 211 & L (4) Quant and Environmental Analysis *or* CHEM 325 (3) Chemical Thermodynamics *or* BBMB 411 (4) Techniques in Biochemical Research *fall only*
- ___ PHYS 131 & L (5) General Physics I or PHYS 231 & L (5) Classical Physics I
- ___ PHYS 132 & L (5) General Physics II or PHYS 232 & L (5) Classical Physics II

Additional elective coursework to meet 120 credits. Revised by Alison Esser 8-29-22 aesser@iastate.edu