

**IOWA STATE UNIVERSITY**  
**UNDERGRADUATE B.S. IN GENETICS DEGREE REQUIREMENTS**  
**2019-20 CATALOG**

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

<http://undergrad.genetics.iastate.edu/currentElectives.shtml>

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

**Information on AP course credits can be found here:** <http://www.admissions.iastate.edu/cbe/ap.php>

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**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)

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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. **Freshman scholarship application priority deadline: December 1st***

**College of Agriculture and Life Sciences (AGLS)      College of Liberal Arts and Sciences (LAS)**

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|--|----------|--|
| ___ SP CM 212 (3) Fundamentals of Public Speaking<br>or AG EDS 311 (3)               | ---OR--- | ___ 3 years of same foreign language in high school<br>or 4-8 credits of World Languages |
| ___ Arts and Humanities (3) <i>See list*</i>   |          | ___ Social Sciences (9 credits) <i>See list from above link*</i>                         |
| ___ Ethics (3) <i>See list*</i>  |          | ___ Arts and Humanities (12 credits) including   |
| ___ Social Sciences (3) <i>See list*</i>   |          | 3 credits of Sciences/Humanities Bridge  |
| ___ Environmental Awareness Choice<br>(3-4 credits) <i>See list from above link*</i> |          | <i>See list from above link*</i>   |
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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 and spring*
  - \_\_\_ GEN 410 (3) Analytical Genetics *fall and spring*
  - \_\_\_ 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, 444, or BCBIO 402
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**Advanced Genetics Electives: Minimum C-**

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

**Advanced English Writing:**

- \_\_\_ One course from ENGL 302-316 (3) or JLMC 347 (3) Science Communication **Minimum C**

**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 (3) Techniques in Biochemical Research
- \_\_\_ PHYS 111 (5) General Physics I or PHYS 221 (5) Classical Physics I
- \_\_\_ PHYS 112 (5) General Physics II or PHYS 222 (5) Classical Physics II

**Additional elective coursework to meet 120 credits.** Revised by Lois Girton 5-22-19 [lgirton@iastate.edu](mailto:lgirton@iastate.edu)