

IOWA STATE UNIVERSITY
UNDERGRADUATE B.S. IN GENETICS DEGREE REQUIREMENTS
2017-18 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. 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>

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)*

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
or AG EDS 311 (3) | ---OR--- | ___ 3 years of same foreign language in high school
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
3 credits of Sciences/Humanities Bridge |
| ___ Social Sciences (3) <i>See list*</i> | | <i>See list from above link*</i> |
| ___ Environmental Awareness Choice
(3-4 credits) <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
- ___ GEN 322 (3) Introduction to Bioinformatics and
Computational Biology *fall only*, GEN 349 (3) The
Genome Perspective in Biology *spring only*, or
GEN 444 (4) Bioinformatic Analysis *fall only*

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 7-5-17 lgirton@iastate.edu