

Genetics Degree Requirements 2007-09 University Bulletin

Updated 10/06

<http://www.public.iastate.edu/~ugradgen/>

Genetics majors are required to complete 120 credits to graduate. Included within this are specific University, College and Major requirements which must also be fulfilled. Students are ultimately responsible for all issues concerning the satisfactory completion of graduation requirements.

Information in this document is subject to change. See your advisor or the Student Services (103 Bessey) for the most current version.

University Requirements:

| | | | |
|-------------|-------|---------------------|-----|
| English 150 | 3cr | US Diversity* | 3cr |
| English 250 | 3cr | Inter. Perspective* | 3cr |
| Library 160 | 0.5cr | | |

* LAS Students may use University Requirements to fill College Requirement. See office or advisor for details. Ag students must take one course in US Diversity and one course in International Perspectives, these will not count in the humanities or social science requirements for Ag.

College Requirements:

| <u>College Requirements:</u> | <u>LAS</u> | <u>Ag</u> |
|------------------------------|------------------------------------------------------|------------------------------------------------------------------|
| Foreign Language | 8cr | None |
| Communications | 3cr | 3cr (7credits of verbal and written communications for Genetics) |
| Math | Satisfied or exceeded by Genetics Major Requirements | |
| Natural Science | Satisfied or exceeded by Genetics Major Requirements | |
| Arts/Humanities | 12cr* | 3cr |
| Social Science | 9cr* | 3cr |
| Ethics | None | 3cr |

Genetics Major Requirements: 33.5-36.5

| | | | |
|------------------|---------------------------|-------|-------------------------------|
| Genetics 110 | Genetics orientation [F] | 0.5cr | |
| Biology 211/L | Principles of Biology I | 4cr | |
| Biology 212/L | Principles of Biology II | 4cr | |
| Biology 312* | Ecology | 4cr | (College of Agriculture only) |
| Biology 313/L | Principles of Genetics | 4cr | |
| Biology 314/L | Molecular & Cellular Bio | 4cr | |
| Biology 315 | Biological Evolution | 3cr | |
| Genetics 410 | Transmission Genetics | 3cr | |
| Genetics 411 | Molecular Genetics | 3cr | |
| Genetics 462 | Evolutionary Genetics | 3cr | |
| Genetics 491 | Genetics Seminar | 1cr | |
| Microbiology 302 | Biology of Microorganisms | 3cr | |

Supportive Electives: 6 credits (LAS College) or 9 credits (Agriculture College)

Choose from the following departments:

1. Genetics 340 (Human Genetics) 3 cr, Chemistry 211 and 211L (Quantitative Analysis), Statistics 401, 402, 403.
2. All 400 level or above Genetics courses not used in the major, except 508.
3. All course numbered 300 or above from the following departments:
 - a. Biology (except 304, 307, 308, 355, 356, 366 and non-graded courses)
 - b. Biochemistry, Biophysics and Molecular Biology
 - c. Chemistry
 - d. Microbiology
4. Horticulture 425, Agronomy 421 or Animal Science 352.
5. Genetics students in the LAS College must take a bridge Course that involves humanities and science. This course may count towards another college requirement (s) as needed. A list of these courses is available.

Supporting Sciences

Chemistry (17 credits)

One year of General Chemistry, one year of Organic Chemistry, at least 3 credits in 400-level Biochemistry plus 3 additional credits.

1. Chem 177/L 5cr + Chem 178/L 4cr + Chem 331/L 4cr + Chem 332/L 4cr
General I General II Organic I Organic II
2. BBMB 404 or BBMB 420
Biochemistry Physiological Chemistry
3. BBMB 405 or Chemistry 211/L or Chemistry 321
Biochemistry II Quantitative Analysis Laboratory in Physical Chemistry

Math (11-12 credits)

Students must demonstrate competency in algebra and trigonometry either on the ISU Math Placement Exam, the ACT Math subject test or by taking Math 140, 141 or 142. Math 104, 105, 195 and 196 are not accepted by the Biology Program as Math credits.

Option 1: Math 165 (General Calculus I) 4cr + Math 166 (General Calculus II) 4cr + Stat 101 4cr or 104 3cr

Option 2: Math 181 (Calc for Life Science I) 4cr + Math 182 (Calc for Life Sciences II) 4cr + Stat 101 4cr or 104 3cr

Option 3: Stat 101 4cr or 104 3cr + Stat 401 4cr + Math 160 (Survey of Calculus) 4cr

Physics (8-10 credits)

For most students Option 1 is sufficient, those students with skill in Calculus and an interest in Physics may choose Option 2.

Option 1: Physics 111 + 112 (General Physics I and II) 4 cr each

Option 2: Physics 221 + 222 (Classical Physics I and II) 5 cr each

Written Communication

Students must earn a C or better.

The following courses are suggested:

English 302-316 -- however 303, 305, 309, 314 recommended
JL MC 347

Important Information:

For information not covered by this bulletin, please see your advisor or the Student Services Office, 103 Bessey.

Credits toward coursework may be obtained during a study abroad or exchange. Planning is critical. See your advisor at least 1 semester prior to the experience.

All in the Genetics major require a grade of C- (C minus) or better.

Students in Genetics must have a minimum C average (2.0) in the major to graduate.

The English proficiency requirement for Genetics is a C or better in English 104, 105 and the advanced writing course.

Minimum graduation requirements for a Genetics degree from Iowa State University include the following:

Minimum of 120 credits

GPA above or equal to 2.0

The final 32 credits must be taken at ISU or approved.

Students admitted with deficiencies in high school preparation may be required to take courses which do not carry college credit or count toward the graduation requirement of 120 credits.

The LAS College requires 45 credits of 300+ level course work from a 4 yr college.

Courses taken Pass/NotPass (P/NP) cannot be used to meet area requirements or major or minor requirements and will only count toward graduation as electives.

A minimum of 32 ISU credits (of the 120) are required to graduate from ISU.