IOWA STATE UNIVERSITY
UNDERGRADUATE B.S. IN BIOINFORMATICS AND COMPUTATIONAL BIOLOGY
DEGREE REQUIREMENTS  2022-23 CATALOG

The degree requires 120.5 credits. At least 32 credits must be taken at ISU.
(Numbers in parentheses refer to credits; unless noted, classes are offered both fall and spring)

*Course lists found here: https://bcbio.las.iastate.edu/approved-course-lists

I. UNIVERSITY REQUIREMENTS: These apply to all ISU degree programs.
- ENGL 150 (3) Critical Thinking and Communication Minimum C
- ENGL 250 (3) or ENGL 250H (3) Written, Oral, Visual, and Electronic Communication Minimum C
- LIB 160 (1) Library Instruction
- International Perspectives* (3)
- U. S. Diversity* (3) *Certain courses also meet a College requirement for Arts and Humanities or Social Sciences (dual-count)
- Advanced English: ENGL 309 (3) Report and Proposal Writing or ENGL 312 (3) Biological Communication or ENGL 314 (3) Technical Writing Minimum C

II. COLLEGE REQUIREMENTS:
College of Liberal Arts and Sciences (LAS)
- 3 years of a single foreign language in high school or 4-8 credits of World Languages (students who have 2 years of a foreign language only need to complete a 102 level course in the same language)
- Social Sciences* (9 credits)
- Arts and Humanities* (12 credits)

III. MAJOR REQUIREMENTS:
Core Courses: Minimum of 38.5 credits
- GEN 110 (1) BCBio and Genetics Orientation fall only
- GEN 313 & L (4) Principles of Genetics and Genetics Laboratory
- COM S 227 (4) Introduction to Object-oriented Programming
- COM S 228 (3) Introduction to Data Structures
- COM S 230 (3) Discrete Computational Structures
- COM S 311 (3) Design and Analysis of Algorithms
- MATH 165 (4) Calculus I and MATH 166 (4) Calculus II
- BCBIO 322 (3) Introduction to Bioinformatics and Computational Biology fall only
- BCBIO 401 (3) Fundamentals of Bioinformatics and Computational Biology I alternating falls, even years only
- BCBIO 406 (3) Fundamentals of Systems Biology and Network Science alternating springs, odd years only
- BCBIO 490 Independent Study or BCBIO 491 Team Research Projects (1-5 credits) *
- Department Approved list: Select 3-9 Credits from list*

NOTE: Must have 8.0 crs of 300+ level COM S, MATH, or BCBIO taken at ISU with grade of C or higher

Complementary Courses: Minimum of 31 credits
- General Biology: BIOL 211 & 211L (4) Principles of Biology I and BIOL 212 & 212L (4) Principles of Biology
- Advanced Biology: BIOL 314 (3) Molecular Cell Biology or BIOL 315 (3) Biological Evolution or GEN 409 (3) Molecular Genetics
- General Chemistry: CHEM 163 & L (5) College Chemistry and Lab or CHEM 177 & L (5) General Chemistry I and CHEM 178 (3) General Chemistry II
- Physics: PHYS 115 & L (5) or PHYS 131X & L (5) General Physics I or PHYS 231 & L(5) Classical Physics I
- Statistics: STAT 330 (3) Probability and Statistics for Computer Science and STAT 483 (3) Empirical Methods for the Computational Sciences fall only

Additional elective coursework to meet 120.5 credits. Some electives may need to be at the 300+ level to reach the 45 credits of advanced (300+) coursework required by the College of Liberal Arts

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