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) or ENGL 250H (3) Written, Oral, Visual, and Electronic Communication **Minimum C**
- LIB 160 (1) Library Instruction
- International Perspectives* (3) [http://www.registrar.iastate.edu/students/div-ip-guide/IntlPerspectives-current](http://www.registrar.iastate.edu/students/div-ip-guide/IntlPerspectives-current)
- U. S. Diversity* (3) [http://www.registrar.iastate.edu/students/div-ip-guide/usdiversity-courses](http://www.registrar.iastate.edu/students/div-ip-guide/usdiversity-courses)
*Certain courses also meet a College requirement for Arts and Humanities or Social Sciences (dual-count)

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**Advanced English:** ENGL 309 (3) Report and Proposal Writing or ENGL 312 (3) Biological Communication or ENGL 314 (3) Technical Writing

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II. **COLLEGE REQUIREMENTS:**

**College of Liberal Arts and Sciences (LAS)**

Need 45 credits of 300+ level coursework from a 4 YR institution

- 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) [https://las.iastate.edu/students/academics/general-education/general-education-approved-course-list-2016-17/#III%20Social%20Sciences](https://las.iastate.edu/students/academics/general-education/general-education-approved-course-list-2016-17/)
- Arts and Humanities (12 credits) [https://las.iastate.edu/students/academics/general-education/general-education-education-approved-course-list-2016-17/](https://las.iastate.edu/students/academics/general-education/general-education-approved-course-list-2016-17/)

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III. **MAJOR REQUIREMENTS:**

**Core Courses: Minimum of 38.5 credits**

- BCBIO 110 (0.5) BCBIO Orientation *fall only* (GEN 110 may be substituted if BCBIO 110 is not offered)
- GEN 313 & L (4) Principles of Genetics and Genetics Laboratory  
  Note: BIOL 211 & 212 are prerequisites
- COM S 227 (4) Introduction to Object-oriented Programming (sugg first taking COM S 127 if no prior 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 *fall only*

and BCBIO 402 (3) Fundamentals of Systems Biology and Network Science *spring only*

OR BCBIO 444 (4) Bioinformatic Analysis *fall only*
- BCBIO 490 Independent Study or BCBIO 491 Team Research Projects (1-5 credits)
- Department Approved list: Select 3-9 Credits from list [http://catalog.iastate.edu/collegeofliberalartsandsciences/bioinformaticsandcomputationalbiology_undergraduate/#curriculumtext](http://catalog.iastate.edu/collegeofliberalartsandsciences/bioinformaticsandcomputationalbiology_undergraduate/#curriculumtext)

**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
- **Organic Chemistry:** CHEM 231 & L (4) Elementary Organic Chemistry or CHEM 331 & L (4) Organic Chemistry I and CHEM 332 & L (4) Organic Chemistry II
- **Physics:** PHYS 115 & L (5) or PHYS 111 (5) General Physics I or PHYS 221 (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 of these 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 and Sciences.

Prepared by Lois Girton 3-16-20  lgirton@iastate.edu