

INTEGRATIVE BIOLOGY: HONORS INTEGRATIVE BIOLOGY, BSLAS

for the degree of Bachelor of Arts in Liberal Arts & Sciences Major in Integrative Biology, Honors Integrative Biology Concentration

Honors Integrative Biology is designed for superior students wishing to pursue an intensive program in integrative biology and, concurrently, to gain a strong background in the physical sciences and mathematics. Admission is by interview in spring of the freshman year prior to registration for fall. An overall 3.0 GPA is required to apply for admission. Honors Integrative Biology provides preparation suitable for graduate and professional training in biology, as well as for biology careers in the private and public sectors.

Students earning the Honors Integrative Biology Concentration will also earn the Chemistry minor.

Students pursuing a degree in Honors Integrative Biology will be allowed to earn a second degree in the Specialized Curriculum in Biochemistry. Students pursuing a degree in Honors Integrative Biology will not be allowed to double major in Molecular and Cellular Biology.

Substitutions or other changes in the requirements below may be made only by petition to and approval of the director of the Honors Integrative Biology Concentration.

for the degree of Bachelor of Arts in Liberal Arts & Sciences Major in Integrative Biology, Honors Integrative Biology Concentration

Distinction for Excellence in Research: To be eligible for graduation with Distinction for excellence in Research a student must: Complete 2 or more semesters of IB 390 or IB 490 for 2 credit hours or more each semester.

Be signed up for IB 490 prior to or during the semester the student is being considered for Distinction.

Maintain a minimum 3.25 GPA within the major at the end of the penultimate semester.

Give a poster presentation at the Undergraduate Research Symposium or other approved venue.

Have a completed distinction evaluation form submitted by their Faculty Research Advisor. Distinction will be determined by the SIB Distinction Committee based on the poster presentation and the Advisor's evaluation.

High or Highest Distinction for Excellence in Research: To be eligible for graduation with High or Highest Distinction for Excellence in Research a student must:

Complete 2 or more semesters of IB 390 or IB 490 for 2 credit hours or more each semester. Be signed up for IB 490 prior to or during the semester the student is being considered for Distinction.

Maintain a minimum 3.25 GPA within the major at the end of the penultimate semester.

Submit a written thesis and give an oral presentation at the Undergraduate Research Symposium or other approved venue.

Have a completed distinction evaluation form submitted by their Faculty Research Advisor.

The level of Distinction will be determined by the SIB Distinction Committee based on the written thesis, the oral presentation, and the Advisor's evaluation.

For additional information visit: <http://sib.illinois.edu/undergraduate/distinction> (<http://sib.illinois.edu/undergraduate/distinction/>)

General education: Students must complete the Campus General Education (<https://courses.illinois.edu/gened/DEFAULT/DEFAULT/>) requirements including the campus general education language requirement.

Minimum required major and supporting course work: Normally equates to 80-91 hours. Twelve hours of 300- and 400-level in the major must be taken on this campus.

No more than 8 hours of credit in 100-level courses in IB or MCB may be counted toward graduation.

Students may count toward graduation no more than a combined maximum of 10 hours of IB 390 and IB 490 credit offered for independent study.

Minimum hours required for graduation: 120 hours.

Code	Title	Hours
IB 150	Organismal & Evolutionary Biol	4
MCB 150	Molec & Cellular Basis of Life	4
IB 270	Evolution of Molecules & Cells	5
IB 271	Organismal Biology	5
IB 372	Ecology and Evolution ¹	5
MATH 220 or MATH 221	Calculus (Biocalculus section) Calculus I	4-5
MATH 231 or IB 494	Calculus II ² Theoretical Biology + Models	3-4
Select one group of courses:		8-10
CHEM 202	Accelerated Chemistry I	
CHEM 203	Accelerated Chemistry Lab I	
CHEM 204	Accelerated Chemistry II	

CHEM 205	Accelerated Chemistry Lab II	
OR		
CHEM 102	General Chemistry I ³	
CHEM 103	General Chemistry Lab I	
CHEM 104	General Chemistry II	
CHEM 105	General Chemistry Lab II	
Select one group of courses:		6
CHEM 236	Fundamental Organic Chem I	
CHEM 237	Structure and Synthesis	
OR		
CHEM 232	Elementary Organic Chemistry I	
CHEM 233	Elementary Organic Chem Lab I	
At least six hours of advanced courses in Chemistry ⁴		6-8
MCB 450	Introductory Biochemistry	3
Select one group of courses		8-14
PHYS 211	University Physics: Mechanics	
PHYS 212	University Physics: Elec & Mag	
OR		
PHYS 101	College Physics: Mech & Heat	
PHYS 102	College Physics: E&M & Modern	
An approved 300- or 400-level course that includes physical/math principles ⁵		
An approved 300- or 400- level course in statistics ⁶		3
IB 490	Independent Study (2 semesters) ⁷	6
300- or 400- level courses in the biological sciences		10

¹ Continuation in the Integrative Biology Honors Concentration requires a grade of B or better in each of IB 270, IB 271, and IB 372 and a 3.0 overall cumulative GPA.

² If IB 494 is taken instead of MATH 231, it will not count towards the requirement of 10 hours of 300- or 400-level courses in the biological sciences.

³ Introductory chemistry should be completed prior to enrolling in IB 270.

⁴ Recommended courses are: CHEM 312, CHEM 332, CHEM 360, CHEM 437, CHEM 440. Students should discuss alternate choices with the IB advising office. To earn the Chemistry minor students must choose 3 or 4 hour Chemistry courses, excluding research or independent study.

⁵ Recommended courses are: ATMS 421, ANSC 448, MCB 432 or IBH Director approved.

⁶ NRES 421 is recommended. Other suitable courses are CPSC 440 or STAT 400.

⁷ Independent study equivalent to IB 490 in non-IB programs must first be approved by Director of IBH Concentration.

for the degree of Bachelor of Arts in Liberal Arts & Sciences Major in Integrative Biology, Honors Integrative Biology Concentration

By graduation we want all Integrative Biology Honors students to have acquired:

Content-related understandings

- Possess a significant knowledge base in Integrative Biology and Chemical Sciences, including but not limited to:
 - Molecular genetics and biology
 - Diversity and structures and physiological functions of plants and animals
 - Ecology and evolution
 - Biochemical and chemical bases of life and/or systems
 - Statistical inference and modeling of systems
- Understand that biology is integrative and multidisciplinary
- Show curiosity and caring about biology, and an awareness of and appreciation for the diversity of life
- Understand how paradigms of biology relate to society and policy as well as their own lives

Competencies

- Carry out the process of scientific inquiry
- Use critical thinking skills and solve problems
- Use quantitative reasoning and computation skills

4. Apply models (equations/math) to biological phenomena
5. Gain proficiency in scientific writing and speaking
6. Read and evaluate primary scientific literature
7. Critically evaluate science-related news and information
8. Work collaboratively

for the degree of Bachelor of Arts in Liberal Arts & Sciences Major in Integrative Biology, Honors Integrative Biology Concentration

department website: <http://sib.illinois.edu/>

department faculty: School of Integrative Biology Faculty (http://sib.illinois.edu/people/faculty_all/)

advising: SIB advising (<http://sib.illinois.edu/undergraduate/advising/>)

overview of college admissions & requirements: Liberal Arts & Sciences (<http://catalog.illinois.edu/schools/las/academic-units/>)

college website: <https://las.illinois.edu/>