INTEGRATIVE BIOLOGY, BSLAS

for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Integrative Biology

The Integrative Biology major provides students with a solid preparation in genetics, evolution, anatomy, physiology, ecology, and molecular biology. After completion of the foundational 100- and core 200-300-level courses in IB, students complete the required advanced coursework by taking a variety of IB and other courses or focusing on a limited area of IB. Plans for the student’s combination of advanced courses are developed in consultation with an adviser.

All undergraduates in this field are required to have a strong background in the biological and physical sciences.

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

For students interested in adding licensure to the BSLAS in Integrative Biology, please visit the Biology Teaching page (https://sib.illinois.edu/undergraduate/programs/teaching/).

Integrative Biology Distinction: To be eligible for distinction a student must graduate with a grade-point average of at least 3.25 and submit a report of an independent student project (IB 490) about two months prior to graduation for approval by the Integrative Biology Distinction Committee. For additional information visit: SIB Graduation with Distinction Requirements (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 66-75 hours.

Minimum hours required for graduation: 120 hours.

Orientation and Professional Development

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS 101</td>
<td>Design Your First Year Experience (International students take LAS 100 and External transfer students take LAS 102 instead)</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Hours

1

Major Core Requirements and Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 220</td>
<td>Calculus (sections that start with 'X' are strongly recommended)</td>
<td>4-5</td>
</tr>
<tr>
<td>or MATH 221</td>
<td>Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 212</td>
<td>Biostatistics</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one group of courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 102</td>
<td>General Chemistry I</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry Lab I</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 104</td>
<td>General Chemistry II</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 105</td>
<td>General Chemistry Lab II</td>
<td>5-6</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 202</td>
<td>Accelerated Chemistry I</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 203</td>
<td>Accelerated Chemistry Lab I</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 204</td>
<td>Accelerated Chemistry II</td>
<td>5-6</td>
</tr>
<tr>
<td>CHEM 205</td>
<td>Accelerated Chemistry Lab II</td>
<td>5-6</td>
</tr>
</tbody>
</table>

Select one group of courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 232</td>
<td>Elementary Organic Chemistry I</td>
<td>8-10</td>
</tr>
<tr>
<td>&amp; CHEM 233</td>
<td>and Elementary Organic Chem Lab I</td>
<td>8-10</td>
</tr>
<tr>
<td>CHEM 236</td>
<td>Fundamental Organic Chem I</td>
<td>8-10</td>
</tr>
<tr>
<td>&amp; CHEM 237</td>
<td>and Structure and Synthesis</td>
<td>8-10</td>
</tr>
</tbody>
</table>

Information listed in this catalog is current as of 12/2022
PHYS 101 & PHYS 102
College Physics: Mech & Heat
and College Physics: E&M & Modern

PHYS 211 & PHYS 212
University Physics: Mechanics
and University Physics: Elec & Mag

IB 150
Organismal & Evolutionary Biol

MCB 150
Molec & Cellular Basis of Life

IB 202
Physiology (IB 202 requires animal dissection and no equivalent alternative is available. IB majors are required to enroll in the 4-hour version of this course.)

IB 203
Ecology

IB 204
Genetics (IB majors are required to enroll in the 4-hour version of IB 204.)

IB 302
Evolution

At least 14 hours of coursework from the Approved List of Advanced Courses below:

- **Area I: Organismal and Evolutionary Biology** (IB 335, IB 360, IB 362, IB 368, IB 401, IB 461, IB 462, IB 463, IB 464, IB 471)
- **Area III: Integrative Anatomy, Physiology, and Molecular Biology** (IB 303, IB 364, IB 420, IB 421, IB 426, IB 427, IB 434, IB 435)

One advanced course with a laboratory and/or field component.

IB 303, IB 335, IB 368, IB 401, IB 427, IB 430, IB 434, IB 444, IB 451, IB 452, IB 453, IB 481, IB 482, IB 494

Remaining hours can be taken from any of the courses listed above or from the following list:


Total Hours of Curriculum to Graduate: 120

for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Integrative Biology

**Sample Sequence**

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a fourth level of a language other than English. For more information, see the corresponding section on the Degree General and Education Requirements page (http://catalog.illinois.edu/general-information/degree-general-education-requirements/).

### First Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS 101</td>
<td>1 MCB 150</td>
</tr>
<tr>
<td>IB 150</td>
<td>4 CHEM 104 (or CHEM 204)</td>
</tr>
<tr>
<td>CHEM 102 (or CHEM 202)</td>
<td>3 CHEM 105 (or CHEM 205)</td>
</tr>
<tr>
<td>CHEM 103 (or CHEM 203)</td>
<td>1 Language Other than English (4th level)</td>
</tr>
<tr>
<td>Language Other than English (3rd level)</td>
<td>4 MATH 220 (or MATH 221) or Comp. I</td>
</tr>
<tr>
<td>Comp. I or MATH 220 (or MATH 221)</td>
<td>4-5</td>
</tr>
</tbody>
</table>

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### Second Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>IB 203</td>
<td>4 IB 202</td>
</tr>
<tr>
<td>IB 204</td>
<td>4 IB 302</td>
</tr>
<tr>
<td>CHEM 232 (or CHEM 236)</td>
<td>4 CHEM 233 (or CHEM 237)</td>
</tr>
<tr>
<td>General Education course</td>
<td>3 STAT 212</td>
</tr>
</tbody>
</table>

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Information listed in this catalog is current as of 12/2022
Third Year

**First Semester**  | **Hours**  | **Second Semester**  | **Hours**
--- | --- | --- | ---
Advanced IB course | 3 | 3 | 

**Second Semester**  | **Hours**
--- | ---
PHYS 101 (or PHYS 211) | 5
General Education course | 3
General Education course | 3

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Fourth Year

**First Semester**  | **Hours**  | **Second Semester**  | **Hours**
--- | --- | --- | ---
Advanced IB Course | 3 | 3 | 
Advanced IB Course | 3 | 
General Education course | 3 | 
Free elective course | 3 | 
Free elective course | 3 | 

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Total Hours 120

for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Integrative Biology

By the time they graduate, an Integrative Biology major should:

**Content-related understandings**

1. Possess a significant knowledge base in Integrative Biology, including but not limited to:
   a. Structure and function
   b. Ecology
   c. Genetics
   d. Evolution
   e. Molecular biology
   f. Statistical inference

2. Understand that biology is integrative and multidisciplinary

3. Show curiosity and caring about biology, and an awareness of and appreciation for the diversity of life

4. Understand how paradigms of biology relate to society and policy as well as their own lives

**Competencies**

1. Carry out the process of scientific inquiry
2. Use critical thinking skills and solve problems
3. Use quantitative reasoning and computation skills
4. Apply simple 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

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School of Integrative Biology

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

Advising

SIB Advising Website (https://sib.illinois.edu/undergraduate/advising/)
SIB Advising email (advising@sib.illinois.edu)

College of Liberal Arts and Sciences

College of Liberal Arts and Sciences Website (https://las.illinois.edu/)

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Information listed in this catalog is current as of 12/2022
Admissions
University of Illinois Undergrad Admissions (https://www.admissions.illinois.edu/)